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POSLOVANJE SEKTORA OSIGURANJA U REPUBLICI SRBIJI U USLOVIMA PANDEMIJE KOVIDA 19

PREGLEDNI RAD

Apstrakt

Svaka ekonomska ili zdravstvena kriza primorava osiguravajuća društva, zbog osetljivosti njihovih portfelja, na prilagođavanje poslovanja, prvenstveno u pogledu kvalitetnog upravljanja rizicima. U radu su ispitivani uticaji pandemije na dobit i premiju osiguranja osiguravajućih društava, a posebno uticaj promene premije putnog zdravstvenog osiguranja, kao vrste osiguranja čija je premija najviše pogođena pandemijom. Ispitivanje uticaja pandemije na sektor osiguranja sprovedeno je komparativnom analizom premije osiguranja i dobiti pre i posle pandemije. Analiza uticaja varijacije premije putnog zdravstvenog osiguranja na ostvarenu dobit osiguravajućih kuća vršena je primenom panel regresione analize. Dobijeni rezultati pokazuju da ne postoji značajan uticaj pandemije na sektor osiguranja Republike Srbije, kao ni uticaj promene premije putnog zdravstvenog osiguranja na ostvarenu dobit osiguravajućih društava u Republici Srbiji.

Ključne reči: osiguravajuća društva, pandemija, kovid 19, tržište osiguranja, putno zdravstveno osiguranje, zdravstvena kriza

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I. Uvod

Osiguravajuća društva godinama su pod konstantnim pritiskom raznih kriza, od ekonomske, preko političke, do poslednje zdravstvene u vidu pandemije kovida 19. Sektor osiguranja, sa svojom senzitivnošću u vidu upravljanja rizicima i snošenja rizika u ime trećeg lica, ima dodatni pritisak regulatornih tela da s pažnjom upravlja svojim portfeljom i investicijama, kao i sredstvima prikupljenim od svojih osiguranika. Imajući u vidu konstantan rast sektora osiguranja Republike Srbije, od velikog značaja je praćenje uticaja zdravstvene krize na taj kontinuitet, potencijalne promene i rezultate sektora osiguranja.

Istraživanje uticaja krize, bilo ekonomske, zdravstvene ili neke druge, na sektor osiguranja, u poslednjoj deceniji dobilo je na značaju.⁴ Veći rizik plasiranja sredstava ili recesija kao posledica privredne stagnacije usled ekonomske ili zdravstvene i političke krize predmet su mnogih istraživanja, s ciljem testiranja sektora osiguranja i njegove sposobnosti adaptiranja na do sada poznate krize u svetu. Brojni autori bavili su se upravo činjenicom kako osiguravajuća društva uspevaju da odole krizama i da suzbiju posledice recesije u vreme velike ekonomske krize.⁵ Međutim, posledice velikih kriza su manje u sektoru osiguranja nego što je to slučaj sa bankarskim sektorom.

Uticaj navedenih kriza na sektor osiguranje je višedimenzionalan. On se može pokazati kao negativan na pojedinačne kompanije, ali ne na sve. U velikoj meri taj uticaj zavisi od strukture portfelja osiguravajućeg društva, veličine tržišta, konkurencije, startne osnove, nivoa liberalizacije. U prilog tome govori podatak da je finansijska kriza imala najjači negativan uticaj upravo na ona društva koja su specijalizovana za određenu uslugu, ili koja imaju izuzetno slabu diverzifikaciju usluga osiguranja.⁶

Iskustva su pokazala da finansijska kriza ima snažan uticaj na bankarski sektor, stvarajući privid da je solventnost osiguravajućih društava za vreme krize održiva. Međutim, svaka, pa i finansijska kriza ima svoje kako kratkoročne tako i dugoročne posledice na sektor osiguranja.⁷ Osiguravajuća društva suočavaju se s brojnim izazovima nakon navedenih kriza, prilagođavajući se novim nametnutim tržišnim zahtevima u vidu kreiranja novih paketa usluga, ali i u vidu potrebe za

⁴ Baluch, F., Mutenga, S., Parsons, C. "Insurance, Systemic Risk and Financial Crisis", *The Geneva Papers on Risk and Insurance - Issues and Practice*, 2011, 126-163

⁵ Haegali, J. J. „How insurance markets are bucking the global recession trend“, Swiss Re Institute, 2020.

⁶ Vladimir Njegomir, Boris Marović, Rado Maksimović. „The Economic Crisis And The Insurance Industry: The Evidence From The Ex-Yugoslavia Region“, *Economic Annals*, Faculty of Economics, University of Belgrade, 2010. vol. 55(185), pages 129–162.

⁷ Sebastian Schich. „Insurance companies and the financial crisis“, *OECD Journal: Financial Market Trends*, OECD Publishing, vol. 2009(2), pages 123–151.

promenom politike investiranja. Vrednost i struktura imovine društava već su pretrpele odgovarajuću štetu nakon poslednje velike finansijske krize. Veliki izazovi s kojima se osiguravajuća društva danas suočavaju tiču se ulaganja, restrukturiranja i redefinisanja aktuelnih politika i strategija daljeg rasta i razvoja.⁸

Uticaj pandemije na delatnost osiguranja podrazumeva kompleksno ispitivanje više različitih aspekata. U pitanju su mnogi endogeni i egzogeni faktori poput ponašanja potrošača, njihovih odluka, odluka državnih regulatornih institucija itd. Negativni efekti mogu se ogledati u padu premije osiguranja i dobiti, povećanju troškova sprovođenja osiguranja ili isplate šteta u određenim vrstama osiguranja. Pozitivni efekti, s druge strane, dugoročno gledano, jesu povećanje svesti stanovništva o potrebi za osiguranjem.⁹

Predmet istraživanja ovog rada biće uticaj pandemije kovida 19 na sektor osiguranja Republike Srbije. Rezultati ispitivanja takvog uticaja utiču na odluke i pripremu za neke nove krize, s ciljem amortizovanja njihovog uticaja na rezultate poslovanja (dobit, premiju osiguranja, ključne racije profitabilnosti i likvidnosti i slično). Cilj ovog istraživanja je da ispita u kojoj je meri pandemija uticala na rezultate poslovanja osiguravajućih društava u Republici Srbiji. U poređnom analizom premije osiguranja po godinama i po vrstama osiguranja ispitivan je uticaj pandemije na sektor osiguranja, raspored premije osiguranja i ostvarenu dobit, ali i uticaj varijacije premije putnog zdravstvenog osiguranja, kao najosetljivije vrste osiguranja, na neto rezultat osiguravajućih društava.

U analizi uticaja pandemije kovida 19 na sektor osiguranja Republike Srbije (RS) korišćeni su izveštaji Narodne Banke Srbije u pogledu ostvarene premije u desetogodišnjem periodu ukupno i po vrstama osiguranja.

U komparaciju ukupnih rezultata uključena su sva osiguravajuća društva na tržištu RS, dok će uticaj promene premije putnog zdravstvenog osiguranja biti posmatran kod pet osiguravajućih društava, po kriterijumu najviše ugovorene premije (po tržišnom učešću). Period posmatranja je 2011–2020. godina, sa akcentom na rezultate poslovanja u poslednjoj posmatranoj godini.

Osnovne hipoteze koje čine osnov ovog istraživanja su:

1. HIPOTEZA 1: Pandemija kovida 19 dovela je do pada ukupno ostvarene premije osiguranja osiguravajućih društava RS;
2. HIPOTEZA 2: Aktuelna zdravstvena kriza dovela je do negativnog rezultata poslovanja sektora osiguranja RS;
3. HIPOTEZA 3: Premija putnog zdravstvenog osiguranja nema statistički značajan uticaj na ostvarenu dobit osiguravajućih društava RS.

⁸ Kočović, J., Antić, T., Jovović M., „The Impact of the Global Financial Crisis on the Structure of Investment Portfolios of Insurance Companies“, *Ekonomski anali*, Ekonomski fakultet Beograd, 2011, pp 143-161.

⁹ Strupczewski, G., Klonowska, A., „Impact of the COVID-19 pandemic on the global insurance market“. In book: *Strategies, models and technologies of economic systems management in the context of international economic integration*, 2020, pp. 230–238, Publisher: Institute of Economics of the Latvian Academy of Science

Rad se sastoji iz tri zaokružene celine: prvi deo rada, nakon apstrakta i uvođa, usmeren je na pregled literature i ranija teorijsko-empirijska istraživanja; drugi deo rada odnosi se na potvrđivanje postavljenih hipoteza 1 i 2, u smislu ispitivanja uticaja pandemije na rezultate poslovanja osiguravajućih kuća u RS; treći deo rada sadrži dokazivanje uticaja varijacije premije putnog zdravstvenog osiguranja na neto rezultat osiguravajućih društava u RS radi potvrde postavljene hipoteze 3.

Pregled literature

Brojni teoretičari bavili su se analizom uticaja aktuelne zdravstvene krize kako na ukupnu privredu tako i na sektor osiguranja. Rezultati njihovih studija sistematizovani su prema karakteru efekata krize na premiju osiguranja, likvidnost i profitabilnost društava, organizaciju rada, kao i na brojne druge aspekte.

Uticaj na zdravstveno i životno osiguranje

Uticaj pandemije kovida 19 na sektor osiguranja, između ostalog, primećen je i u vidu značajnih promena regulative zdravstvenog osiguranja, kako privatnog tako i državnog obaveznog osiguranja. Naročito se ističe dugoročnost tih izmena koja je izostala u američkoj regulativi.¹⁰ Pandemija kovida 19 uticala je i na osiguravajuća društva u delu inoviranja postojećih i osmišljavanja novih usluga osiguranja. U pitanju su najčešće kratkoročne usluge zdravstvenog osiguranja s fiksnim iznosima naknada iz osiguranja.¹¹ Istraživanje na uzorku od 100 američkih kompanija koje se bave životnim osiguranjem i preko 800.000 polisa osiguranja pokazalo je da su osiguravajuća društva sprovedla minimalna prilagođavanja kao odgovor na povećan rizik od mortaliteta, u smislu neznatnog povećanja iznosa premije osiguranja, pogotovo kod osiguranika starijih od 75 godina koji su pušači.¹²

Osiguravajuća društva u Republici Srbiji brzo su reagovala i prilagodila svoje uslove osiguranja novim rizicima tesno povezanim s pandemijom. Izmene su izvršene u pogledu isključenja iz osiguranja svih onih obaveza koje mogu biti posledica epidemijskih i pandemijskih rizika. Čini se da su se kompanije u Republici Srbiji više usredsredile na isključenja i smanjenje potencijalnih budućih šteta nego na inovacije u pogledu novih rizika uključenih kod zdravstvenog i životnog osiguranja, prekida poslovanja kao posledice pandemije i slično.¹³ Primetno je da su izostale nove usluge,

¹⁰ Joshua D. F., Bradley, K., „The COVID-19 Pandemic and Health Insurance Regulation“, *Journal of Insurance Regulation*, 2020, National Association of Insurance Commissioner.

¹¹ Pranali, N., Vinita, A.K., „Impact of COVID-19 on Health Insurance Sector“. *International Journal of Scientific Research in Engineering and Management (IJSREM)*, 2020, 2582-393.

¹² Harris, Timothy F., Yelowitz, Aaron, Courtemanche, Charles, 2020., „Did COVID-19 Change Life Insurance Offerings?“, *IZA Discussion Papers 13912*, Institute of Labor Economics (IZA).

¹³ Jovanović, S. O., „Uticaj pandemije kovida 19 na osiguranje“. *Tokovi osiguranja*, 2021, 37(1), 41–69.

izuzev kovid pokrća kod putnog zdravstvenog i životnog osiguranja. Takođe su izostala pokrća prekida biznisa kao posledice pandemije, osiguranje potraživanja, bolovanja zaposlenih itd. Primer nedovoljnog prilagođavanja osiguravajućih društava može se naći i u epidemiji SARS-a, nakon koje je većina osiguravajućih društava isključila epidemije i pandemije u svim svojim uslovima osiguranja.

Osiguravajuća društva u vremenu pandemije jači akcenat stavljaju na preuzimanje rizika kod međunarodnih putovanja, pogotovo u zemlje s velikim brojem novozaraženih stanovnika. U najavi je primena određenih grejs perioda prilikom sklapanja ugovora o osiguranju. Ono što je očekivano jeste da će ova pandemija i dalje znatno povećavati prodaju polisa zdravstvenog osiguranja (sa uključenim pokrćima hospitalizacije, dnevnih bolničkih beneficija i medicinske pomoći). U Kini se prodaja tih polisa udvostručila tokom epidemije SARS-a.¹⁴

Osiguravajuća društva pretežno ili isključivo usmerena na životno osiguranje dobijaju još jedan zadatak – da pažljivo investiraju sredstva prikupljena od premije životnog osiguranja. Ako se pokaže da je pandemiju i dalje teško kontrolisati, upravo ti osiguravači, koji su znatnije izloženi mortalitetu, mogu imati značajno velike isplate u odnosu na kapital.¹⁵ Dodatna pažnja se mora usmeriti na upravljanje rizikom i diverzifikacijom portfelja osiguravajućih kuća. Diverzifikacija rizika podrazumevala bi širu lepezu usluga, kojom bi se amortizovali potencijalni gubici jedne vrste osiguranja pogođene u ovom slučaju pandemijom.

Pozitivan uticaj zdravstvene krize

Osiguravajuća društva u Severnoj Makedoniji pokazala su izdržljivost i pozitivno poslovanje i pored snažne zdravstvene krize koja je pogodila ceo svet.¹⁶ Primer tržišta osiguranja Severne Makedonije upravo ukazuje da tržišta osiguranja širom sveta nisu isto podnela pritisak pandemije, što je zavisilo od strukture samog, iako nedovoljno razvijenog, tržišta. Uticaj pandemije kovida 19 na tržište osiguranja Severne Makedonije pokazuje pad broja i iznosa prijavljenih šteta u prva dva kvartala 2020. godine za 11,69%, dok je premija osiguranja u istom periodu pala za 11,32%.

Tržište osiguranja Nigerije takođe je osetilo uticaj pandemije, i to naročito u produktivnosti. Međutim, osiguravajuća društva su u ovoj zemlji za vreme pandemije imala povećanje broja klijenata i premije osiguranja, naročito u tzv. ličnim osiguranjima, tj. u dobrovoljnom zdravstvenom osiguranju i osiguranju života s dopunskim rizicima kovid pokrća.¹⁷ Uticaj pandemije na tržišta osiguranja je raznolik i zavisi od

¹⁴ Strupczewski, G., Klonowska, A. 2020, pp. 230-238.

¹⁵ Kirti, D., Shin, M. Y., „Impact of COVID-19 on Insurers“. *International Monetary Fund Research*. 2020, pp. 1–11.

¹⁶ Stojkoski, V., Jolakoski, P., Ivanovski, I., „The short-run impact of COVID-19 on the activity in the insurance industry in the Republic of North Macedonia“, 2020, ArXiv.

¹⁷ Festus, T., Solanke, F., Olugbamiye, O., Olaleye, B., Ekundayo, O.F., „Effects of COVID-19 pandemic on insurance companies' productivity in Nigeria“. *International Journal of Intellectual Discourse (IJID)*, 2020, pp. 180-189.

nivoa razvijenosti, ali i strukture portfelja najvećih osiguravajućih društava. Tako tržišta na prostoru bivše Jugoslavije i dalje imaju dominantno učešće premije obaveznog osiguranja motornih vozila, odnosno odgovornosti vlasnika prema trećim licima. Zbog toga ne mogu imati identičnu osetljivost na pandemiju kao što je to slučaj u nekim drugim državama, gde su u portfelju dominantne druge vrste osiguranja.

Negativan uticaj zdravstvene krize

Određena tržišta u razvoju pokazala su veću osetljivost osiguravajućeg sektora na pandemiju. Tako se na tržištu osiguranja Bangladeša postavlja pitanje likvidnosti, kao jednog od najznačajnijih pokazatelja poslovanja osiguravajućih društava, koji obezbeđuje isplatu šteta osiguranicima. Broj prodatih automobila u 2020. godini, broj zatvorenih preduzeća, svedenost putovanja na minimum, distanca, nepostojanje adekvatne komunikacije u prodajnom procesu doveli su do pada aktivnosti osiguravajućih društava u Bangladešu, kao i do pada premije i izmene strukture portfelja i profita.¹⁸

Pandemija je ipak imala značajan kratkoročan negativan uticaj na kinesko tržište osiguranja, zbog ograničenog marketinga, kanala prodaje i smanjene potražnje za osiguranjem domaćinstava. Međutim, iako je takav uticaj očigledno negativan, on je znatno veći kod imovinskih osiguranja nego kod osiguranja lica u vidu životnog i zdravstvenog osiguranja.¹⁹

Evropski sektor osiguranja takođe je osetio posledice pandemije, što pokazuje i smanjenje prosečnog ROA (*return on assets* – stopa prinosa na imovinu). Primećeno je značajno smanjenje ROA u nemačkim i italijanskim osiguravajućim društvima, kao i smanjenje solventnosti u belgijskom, francuskom i italijanskom sektoru osiguranja, dok poljsko tržište nije osetilo negativne posledice ove zdravstvene krize. Posmatrajući celokupno tržište osiguranja Evrope, može se zaključiti da su osiguravajuća društva ostala solventna i likvidna uprkos pandemiji.²⁰ Osiguravajuća društva na navedenim tržištima moraju kroz značajniji rast premije (što kroz nove usluge, što kroz rast premije po polisi) dovesti do rasta ROA, sa ciljem smanjivanja nastalih gubitaka.

Iznenadni i neočekivani šok osetila je delatnost osiguranja Republike Gane zbog očigledne nespremnosti kompanija na ovom tržištu za ovakav vid krize. Zabeležen je pad profita za 16,6% za period mart–jun 2020. godine, kao i rast potraživanja

¹⁸ Haque, A., Mohona, N. T., Sultana, S., Kulsum, U., „The impact of covid-19 on insurance industry of Bangladesh“, *Indian Journal of Finance and Banking*, 6(1), 2021, 73–85.

¹⁹ Wang, Y., Zhang, D., Xiaoquan, W., Fu, Q., „How does COVID-19 affect China's insurance market?“, *Emerging Markets Finance and Trade*. 2020, 56(10), pp. 2350–2362.

²⁰ Puławska, K., „Financial Stability of European Insurance Companies during the COVID-19 Pandemic“. *Journal of Risk and Financial Management*. 2021, 14(6), pp. 1-18.

za 38,4% u istom periodu. Ukupna premija pala je za 17,01%, a samo mali broj kompanija zadržao je svoje tržišno učešće.²¹

Osiguravajuće kuće sa portfeljom zdravstvenog osiguranja ipak su doživele značajan udarac na isplate šteta bolnicama i klinikama u Sjedinjenim Američkim Državama. Indeks upravljanja zdravstvenom zaštitom pao je na 7%, što ukazuje na to da su investitori osetili buduću značajnu pogođenost sektora zdravstva. Negativni ekonomski izgledi za sektor zdravstva doveli su do uključivanja osiguravajućih društava u savezni paket stimulativnih olakšica Sjedinjenih Američkih Država.²²

Pad broja putovanja ima značajan uticaj i na one kompanije koje su fokusirane na putno zdravstveno osiguranje. Taj pad koji donosi gubitke (preko 1 bilion dolara i preko milijardu međunarodnih dolazaka manje), nedvosmisleno utiče i na pad premije putnog zdravstvenog osiguranja u svetu.²³

Globalna zdravstvena kriza predstavlja šok za indijski sektor osiguranja, koji je znatno doprinio rastu i razvoju privrede ove zemlje (7% učešća u bruto društvenom proizvodu). Ono što se sada zahteva od državnog regulatora jeste pomoć sektoru kako bi se dosadašnji rast vratio na prvobitno stanje pre pandemije.²⁴

Uticaj zdravstvene krize na organizaciju rada osiguravajućih društava

I pored velikog broja zemalja gde zdravstvena kriza 2020. godine nije imala značajnije negativne efekte na poslovanje, neophodna je bolja komunikacija na relaciji osiguravajuće društvo – država (regulator). Zahvaljujući svojim aktivnostima prenošenja rizika i investiranja, osiguravajuća društva mogu značajno doprineti ekonomskom rastu, pa su u skladu s tim potrebne transparentne pretpostavke rizika i kontrole s ciljem obezbeđivanja solventnosti i održivosti poslovanja.²⁵

Identifikovani su ključni trendovi u rastu onlajn prodaje osiguranja (30-40%), kao i u povećanju potražnje za životnim i zdravstvenim osiguranjem. Došlo je i do jačanja svesti o važnosti životnog osiguranja, ali i do uvođenja raznih inovativnih rešenja i dodatnih pokrića u uslugama osiguranja. Negativni efekti ogledaju se u kašnjenju plaćanja premije osiguranja, odnosno rastu potraživanja (koja kroz vremenska razgraničenja imaju uticaj na smanjenje dobiti društva), kao i u manjem

²¹ Babuna P., Xiaohua Y., Gylilbag A., Awudi A.D., Ngmenbelle D., Dehui B. „Impact of COVID-19 on the insurance industry“. *International Journal of Environmental Research and Public Health*. 2020, 17:5766.

²² Ozili, Peterson & Arun, Thankom. „Spillover of COVID-19: Impact on the Global Economy“. *MPRA Paper* 99317. 2020. University Library of Munich, Germany.

²³ Salehnia, N.Zabihi, S., Mohammad, G.; Safarzaei, K. „The impact of COVID-19 Pandemic on Tourism Industry“. *A Statistical Review in European Countries*. 2021. Conference contribution.

²⁴ Parvathi, V., Lalitha, C. „Impact of Covid/19 on the Indian insurance sector“. *Perspectives on Business Management & Economics*. 2021, 60-65.

²⁵ Levantesi, S., Piscopo, G. „Insurance Role for Handling the COVID-19 impact on Business and Society“. *Journal of Applied Management and Investments*. 2021, 9(4), 183–191.

procentu obnove osiguranja i smanjenom broju novih imovinskih osiguranja. Takođe, jedan od negativnih efekata ove krize jeste i smanjenje ulaganja zbog finansijske neizvesnosti.²⁶

Zaključavanje je usmerilo osiguravajuće kuće da više koriste programe automatskog ugovaranja osiguranja, bez ličnog prisustva prodavca. Njih preko 26% proširilo je takav vid prodaje osiguranje. S druge strane, pojedini državni regulatori su od osiguravajućih kuća zatražili produžavanje grejs perioda pri plaćanju premije osiguranja, što je prihvatilo preko 77% kompanija.²⁷

Prilagođavanje novim savremenim informatičkim rešenjima i platformama pokazalo se kao još jedan od izazova. Distanca, nemogućnost oflajn komunikacije, rad od kuće, zatvaranja naterali su osiguravajuća društva da se značajnije posvete komunikaciji s klijentima na način nešto drugačiji od tradicionalnog prodajnog procesa.²⁸

„Deloitte“ izdvaja četiri ključne oblasti uticaja pandemije na rad osiguravajućih društava: 1) poslovni, finansijski rizik i rizik klijenata, 2) percepcija, brend i strategija, 3) operativna otpornost, pružanje usluga i radna snaga, 4) upravljanje, rizik i kontrola.²⁹

Kriza je dovela do premeštanja radnih procesa na rad od kuće, ali i na onlajn prijave šteta, ugovaranja osiguranja i celokupnu komunikaciju putem savremenih platformi. Službe za ljudske resurse imaju poseban zadatak u narednom periodu u vidu merenja efikasnosti zaposlenih koji rade od kuće. Osiguravajuće kuće dodatno prilagođavaju svoj marketing i postprodajni proces novim uslovima poslovanja.

II. Uticaj pandemije kovida 19 na rezultate sektora osiguranja Republike Srbije

Merenje intenziteta uticaja tekuće pandemije na sektor osiguranja RS izvršeno je poređenjem ključnih pokazatelja poslovanja kroz ostvarenu premiju osiguranja i neto rezultat.

Posmatrajući ukupno ugovorenu premiju osiguranja na tržištu RS (Tabela 1), uočavamo smanjenje rasta, ali je tržište ipak zabeležilo rast od 2,3% u 2020. godini u odnosu na 2019. godinu.

²⁶ Babita, Y., Pushpa, S., „Study on the After Effect of Covid-19 Pandemic in Life Insurance Sector in India“. *Journal of Interdisciplinary Cycle Research*. XIII. 2021, 504-510.

²⁷ Society of Actuaries (SOA), „Impact of COVID-19“, *Society of Actuaries Research*. 2020.

²⁸ Xia, Y., Li, S., Meng, K., „The Impact of the COVID-19 on the Insurance Industry in China“. *Frontiers in Economics and Management*. 2020, 1(12), 28.

²⁹ Deloitte., „Impact of COVID-19 on the Insurance Sector“, 2020.

Tabela 1. Premija osiguranja po godinama u RS u 000 rsd

Godina	Premija neživotnog osiguranja	% promene	Premija životnog osiguranja	% promene	Ukupno	% promene
2011	47.321.292,00	0,32	9.992.706,00	6,84	57.313.998,00	1,40
2012	49.608.308,00	4,83	11.855.400,00	18,64	61.463.708,00	7,24
2013	46.976.051,00	-5,31	14.065.458,00	18,64	61.041.509,00	-0,69
2014	53.399.931,00	13,67	16.005.074,00	13,79	69.405.005,00	13,70
2015	61.561.694,00	15,28	19.364.294,00	20,99	80.925.988,00	16,60
2016	66.010.278,00	7,23	23.127.708,00	19,43	89.137.986,00	10,15
2017	70.336.633,00	6,55	22.757.361,00	-1,60	93.093.994,00	4,44
2018	76.121.610,00	8,22	23.788.981,00	4,53	99.910.591,00	7,32
2019	82.385.409,00	8,23	25.064.463,00	5,36	107.449.872,00	7,55
2020	83.753.833,00	1,66	26.162.910,00	4,38	109.916.743,00	2,30
Prosek promena		6,07		11,10		7,00

Izvor: prilagodio autor sa www.nbs.rs

Imajući u vidu ogroman pad broja putovanja u 2020. godini, očekivan je i pad premije putnog zdravstvenog osiguranja. Premija te vrste osiguranja zabeležila je pad od preko 1,5 milijardi dinara u 2020. godini, odnosno pad od skoro 61% (Tabela 2). Takav pad bi podrazumevao i pad u ukupnoj premiji osiguranja, što se nije desilo.

Tabela 2. Premija putnog zdravstvenog osiguranja po godinama u 000 rsd

Godina	Premija	% promene
2011	733.258,00	-16,29
2012	1.197.433,00	63,30
2013	1.350.068,00	12,75
2014	1.506.657,00	11,60
2015	1.712.817,00	13,68
2016	1.848.432,00	7,92
2017	2.080.616,00	12,56
2018	2.287.494,00	9,94
2019	2.478.353,00	8,34
2020	971.141,00	-60,82

Izvor: prilagodio autor sa www.nbs.rs

Premija obaveznog osiguranja od odgovornosti vlasnika motornih vozila tradicionalno čini najveće učešće ukupnog tržišta RS. Ta premija nije zabeležila pad, ali je ipak zabeležen znatno manji rast od 1,82% u 2020. godini u odnosu na prethodne godine posmatranja (Tabela 3).

Tabela 3. Premija obaveznog osiguranja od odgovornosti vlasnika motornih vozila u 000 rsd

Godina	Premija	% promene
2011	18.709.971,00	-0,55
2012	19.332.284,00	3,33
2013	19.573.648,00	1,25
2014	22.706.165,00	16,00
2015	29.007.378,00	27,75
2016	30.208.399,00	4,14
2017	31.980.243,00	5,87
2018	33.558.552,00	4,94
2019	35.373.139,00	5,41
2020	36.018.025,00	1,82

Izvor: prilagodio autor sa www.nbs.rs

Imajući u vidu pad ekonomske aktivnosti (Privredna komora Srbije, 2021), kao i vanredno stanje, očekivalo se da će premija auto-kasko osiguranja zabeležiti znatan pad u 2020. godini, međutim, to se nije desilo. Iako je zabeležen rast premije od preko 600 miliona dinara (Tabela 4), on je ipak manji od rasta u prethodnim godinama. Tradicionalno negativan odnos premije i isplaćenih šteta doveo je do promene cenovne politike kojom je obezbeđen navedeni rast, iako nije došlo do povećanja broja prodatih polisa.

Tabela 4. Premija auto-kasko osiguranja u 000 rsd

Godina	Premija	% promene
2011	7.177.352,00	-5,73
2012	6.927.923,00	-3,48
2013	6.429.888,00	-7,19
2014	6.049.950,00	-5,91
2015	6.229.062,00	2,96
2016	6.916.653,00	11,04
2017	7.791.685,00	12,65
2018	8.982.425,00	15,28
2019	10.335.755,00	15,07
2020	10.961.273,00	6,05

Izvor: prilagodio autor sa www.nbs.rs

Dobrovoljno zdravstveno osiguranje je vrsta osiguranja s najvećim rastom u poslednjih 10 godina. Savremene, pogotovo strane kompanije, u ugovore o radu kao dodatnu korist uključuju i plaćeno privatno zdravstveno osiguranje za svoje zaposlene. Ta vrsta osiguranja beleži rast u 2020. godini od preko 18%, što je u skladu sa svetskim tokovima da ljudi posežu za ovom vrstom osiguranja u vreme zdravstvene krize (Tabela 5). U pitanju je povećanje premije od preko 500 miliona dinara, što je zajedno sa kasko i životnim osiguranjem, kao i sa još nekim vrstama imovinskih osiguranja, ne samo nadomestilo ogroman pad premije putnog zdravstvenog osiguranja već i obezbedilo rast ukupne premije na tržištu osiguranja RS u uslovima pandemije.

Tabela 5. Premija dobrovoljnog zdravstvenog osiguranja u 000 rsd

Godina	Premija	% promene
2011	971.764,00	-5,08
2012	1.083.190,00	11,47
2013	1.158.120,00	6,92
2014	1.324.894,00	14,40
2015	1.585.351,00	19,66
2016	2.229.411,00	40,63
2017	2.859.554,00	28,26
2018	3.465.351,00	21,19
2019	4.581.469,00	32,21
2020	5.416.185,00	18,22

Izvor: prilagodio autor sa www.nbs.rs

U skladu sa svetskom tendencijom, i tržište životnog osiguranja pokazuje sličnu otpornost. Iako je u 2020. godini zabeležen nešto manji rast nego što je to bio 2019. godine (Tabela 6), ipak je ostvaren rast premije osiguranja od preko milijardu dinara. Time je pad premije putnog zdravstvenog osiguranja potpuno neutralizovan, a zdravstveno osiguranje ponovo je pokazalo pozitivne tendencije i ozbiljno i sigurno poslovanje. Stanovništvo je u vreme zdravstvene krize znatno više ugovaralo polise životnog osiguranja, koje su, inovirane dodatnim pokrićima u pogledu rizika od kovida, doprinele ukupnom rastu premije i pozitivnim pokazateljima poslovanja.

Tabela 6. Premija životnog osiguranja u 000 rsd

Godina	Premija	% promene
2011	9.992.709,00	6,84
2012	11.855.400,00	18,64
2013	14.065.460,00	18,64

Godina	Premija	% promene
2014	16.005.073,00	13,79
2015	19.364.294,00	20,99
2016	23.127.709,00	19,43
2017	22.757.361,00	-1,60
2018	23.788.981,00	4,53
2019	25.064.463,00	5,36
2020	26.162.910,00	4,38

Izvor: prilagodio autor sa www.nbs.rs

Neto rezultat tržišta osiguranja RS u pandemijskoj godini pokazuje stabilnost sektora, pa iako je zabeležen manji rast u odnosu na prethodne godine, osiguravajuća društva RS poslovala su pozitivno (Tabela 7). Rast u ovom pokazatelju iznosi 10,85% u odnosu na 2019. godinu.

Tabela 7. Neto rezultat tržišta osiguranja RS u 000 rsd

Godina	Neto dobitak	Neto gubitak	Neto rezultat
2011	1.941.055,00	1.383.224,00	557.831,00
2012	2.371.872,00	1.166.591,00	1.205.281,00
2013	2.229.168,00	2.272.416,00	-43.248,00
2014	2.900.478,00	2.473.165,00	427.313,00
2015	4.625.617,00	1.721.355,00	2.904.262,00
2016	6.009.647,00	286.508,00	5.723.139,00
2017	6.634.512,00	202.007,00	6.432.505,00
2018	8.877.837,00	19.941,00	8.857.896,00
2019	11.680.788,00	38.067,00	11.642.721,00
2020	12.986.202,00	79.211,00	12.906.991,00

Izvor: prilagodio autor sa www.nbs.rs

Imajući u vidu napred navedeno, može se konstatovati da se prvobitno postavljene hipoteze 1) i 2) u ovom radu moraju odbaciti. Podaci iz napred navedenih tabela pokazuju da pandemija kovida 19 ima uticaja na ostvarenu premiju osiguranja i neto rezultat tržišta osiguranja RS, u smislu manjeg rasta, ali taj uticaj nije doveo do pada premije u odnosu na prethodne godine, kao ni do gubitka i negativnog rezultata tržišta osiguranja RS. Osiguravajuće kuće uspele su da, i pored pada premije putnog zdravstvenog osiguranja, ostvare rast ukupne premije, kao i pozitivan rezultat i rast neto rezultata u odnosu na 2019. godinu. Ti rezultati su pokazatelji kontrolisanog poslovanja i stroge politike reosiguranja, upravljanja rizikom i investiranja.

III. Metodologija istraživanja

Uvidom u izveštaje sa sajta NBS obezbeđene su neophodne informacije za analizu uticaja kretanja premije putnog zdravstvenog osiguranja na neto rezultat osiguravajućih društava na tržištu RS. U skladu s karakterom dostupnih podataka i senzitivnošću problematike, istraživanje je vršeno kombinovanjem kvalitativne i kvantitativne metodologije. Rezultati istraživanja prikazani su pomoću korelacione analize i panel regresije.

Kako bi se detektovao uticaj pada premije putnog zdravstvenog osiguranja na ukupnu ostvarenu dobit, razvijen je model u kojem postoje četiri varijable, od kojih su tri nezavisne, a jedna zavisna. Nezavisne varijable su:

1. Premija obaveznog osiguranja motornih vozila (odgovornosti) – AO
2. Premija kasko osiguranja motornih vozila – AK
3. Premija putnog zdravstvenog osiguranja – PZO.

Zavisna varijabla je:

1. Neto rezultat tržišta osiguranja – NR.

Prilikom izrade modela najpre je izvršena identifikacija promenljivih. Na osnovu ekonomske logike, kao zavisna promenljiva bira se NR (Y), a kao objašnjavajuće promenljive biraju se AO, AK, PZO, odnosno respektivno , , . Mogućnost greške u predviđanju Y u modelu je označena sa e. Koeficijenti nagiba su β_1 , β_2 , β_3 , dok je konstanta obeležena sa β_0 . Samim tim model se može prikazati na sledeći način:

$$Y(NR) = \beta_0 + \beta_1 * + \beta_2 * + \beta_3 + e,$$

odnosno $NR = \beta_0 + \beta_1 * + \beta_2 * + \beta_3 + e$

Empirijsko istraživanje sprovodi se na uzorku od pet osiguravajućih kuća koje čine 78% ukupnog tržišta osiguranja RS, za period od 10 godina. U Tabeli 8 data je deskriptivna statistika za svih 50 opservacija, tj. minimalne i maksimalne vrednosti posmatranih varijabli, njihova aritmetička sredina i standardna devijacija. Zbog karaktera krize cilj je ispitati uticaj osetljivih vrsta osiguranja (putno zdravstveno osiguranje) na ukupni rezultat tržišta u pogledu ostvarene neto dobiti.

Tabela 8. Deskriptivna statistika (u 000 rsd)

	Broj opservacija	Minimalne vrednosti	Maksimalne vrednosti	Aritmetička sredina	Standardna devijacija
AO	50	290188,00	12455539,00	4152505,0000	3390395,06101
AK	50	199581,00	2796087,00	1236409,2400	611497,69719
PZO	50	18761,00	567283,00	227221,9200	136097,19139
NR	50	-1373943,00	8977666,00	998116,6800	1659689,59272
Valid N (listwise)	50				

Izvor: Kalkulacija autora

IV. Uticaj promene premije putnog zdravstvenog osiguranja na neto rezultat tržišta osiguranja Republike Srbije

Ispitivanje navedenog uticaja biće izvršeno kroz panel regresionu analizu, korišćenjem statističkog programskog alata SPSS. Ta vrsta regresione analize ima brojne prednosti u odnosu na tradicionalne regresione modele i analize vremenskih serija, sa većim stepenom slobode i smanjenom kolinearnošću između posmatranih varijabli, čime se poboljšava efikasnost ekonometrijskih procena.³⁰

Prednosti panel regresione analize ogledaju se u otkrivanju dinamičnih odnosa, kontroli uticaja izostavljenih varijabli, stvaranju preciznijih predviđanja za individualne ishode udruživanjem podataka, obezbeđivanju mikroosnova za agregatnu analizu podataka, pojednostavljivanju statističkih zaključaka, analizi nestacionarnih vremenskih serija, upravljanju greškama itd.³¹

Imajući u vidu da za jedinicu posmatranja u svakoj godini opservacije postoji identičan broj podataka, korišćeni su panel balansirani podaci. Zbog nepostojanje konstantnosti korišćenih nezavisnih varijabli tokom vremena, koristiće se model fiksnih efekata za ocenu uticaja nezavisnih varijabli na posmatrane zavisne varijable.³²

1.1. Uticaj varijacije premije putnog zdravstvenog osiguranja na ostvarenu dobit osiguravajućih društava

Opravdanost ispitivanja ovog uticaja ogleda se u činjenici da je ova vrsta osiguranja zabeležila ogroman pad premije osiguranja u 2020. godini zbog zabrane putovanja.

Testiranjem normalnosti raspodele podataka (Shapiro-Wilk i Kolomogorov-Smirnov testovi) utvrđeno je da posmatrani podaci imaju normalnu raspodelu. Na osnovu Tabele 9 i Spearman testa korelacije, može se zaključiti da postoji visoka međusobna korelacija uz adekvatnu statističku značajnost između premije auto-odgovornosti i neto ostvarenog rezultata tržišta osiguranja (.903, uz maksimalnu statističku značajnost). Nešto manja ali takođe visoka korelacija postoji između ukupne premije kasko osiguranja i neto rezultata (0,830), i uz adekvatnu statističku značajnost (0.003). S druge strane, može se zaključiti da postoji statistički najznačajnija korelacija između ostvarenog neto rezultata tržišta osiguranja RS i premije putnog zdravstvenog osiguranja sa koeficijentom korelacije 0.442, ali statistički beznačajna.

³⁰ Hsiao, C. *Analysis of Panel Data* (Econometric Society Monographs), Cambridge, 2014.

³¹ Hsiao, C., „Panel data analysis—advantages and challenges“. *TEST* 16, 2007, 1–22.

³² Knežević, A. *Primena panel modela u identifikovanju faktora uspešnosti poslovanja proizvodnih preduzeća* (doktorska disertacija). Novi Sad: Univerzitet u Novom Sadu – Fakultet tehničkih nauka, 2015, str. 20.

Tabela 9. Rezultati korelacione analize (Spearman koeficijent)

		AO	AK	PZO	NR
AO	Koeficijent korelacije	1	.661*	0.564	.903**
	Sig	.	0.038	0.090	0.000
AK	Koeficijent korelacije	.661*	1	0.164	.830**
	Sig	0.038	.	0.651	0.003
PZO	Koeficijent korelacije	0.564	0.164	1	0.442
	Sig	0.090	0.651	.	0.200
NR	Koeficijent korelacije	.903**	.830**	0.442	1
	Sig	0.000	0.003	0.200	.

*korelacija značajna uz sig manje od 0.05

**korelacija značajna uz sig manje od 0.01

Izvor: Kalkulacija autora

Primenom Breusch-Pagan i Koenker testa³³ utvrđeno je nepostojanje heteroskedastičnosti (Tabela 10), imajući u vidu navedene Sig vrednosti u tabeli koje moraju biti veće od .05.

Tabela 10. BP i Konker test heteroskedastičnosti

Test	LM	Sig
BP	6.103	0.347
Koenker	3.775	0.229

Izvor: Kalkulacija autora

U Tabeli 11 prikazani su rezultati panel regresione analize, odnosno rezultati ispitivanja uticaja varijacija premije različitih vrsta osiguranja na ostvareni neto rezultat tržišta RS.

Tabela 11. Regresioni model – NR nezavisna varijabla

Varijabla	NR - neto rezultat		
	Beta	Sig.	VIF
AO	0.547	0	4.445
AK	0.521	0	2.885
PZO	-0.006	0.905	2.050
R ²	0.992		
Prilagođeni R ²	0.989		
Sig.	0		

Izvor: Kalkulacija autora

³³ Hsiao C. pp. 148

Na osnovu rezultata panel regresione analize, može se zaključiti da R square koeficijent 0.992 ukazuje na to da se ovaj model, odnosno uticaj, može 99% pripisati AO, AK i PZO premiji osiguranja, uz maksimalnu statističku značajnost od .000 (tabela 11).

Test multikolinearnosti (VIF vrednosti, Tabela 11) pokazao je da ne postoji visoka međuzavisnost između posmatranih nezavisnih varijabli.

Uticaj promene premije obaveznog osiguranja vozila (AO) na neto rezultat osiguravajućih kuća prikazan u Tabeli 11 iznosi .547, dakle svako povećanje ove premije za jedan dinar vodi povećanju neto rezultata za .547 dinara, uz maksimalnu statističku značajnost od .000. S druge strane, postoji i značajan uticaj kretanja premije kasko osiguranja (0.521). Iako se u Tabeli 11 uočava negativan uticaj kretanja premije putnog zdravstvenog osiguranja na neto rezultat, u pitanju je statistički beznačajan uticaj, što je adekvatno rezultatima tržišta osiguranja u RS u poslednjoj godini posmatranja, gde premija ove vrste osiguranja nije dovela do pada neto rezultata.

Ova testiranja potvrdila su hipotezu 3 o nepostojanju statistički značajnog uticaja kretanja premije putnog zdravstvenog osiguranja na neto rezultat. Osiguravajuća društva na tržištu RS ostvarila su rast dobiti od oko 10% u odnosu na 2019. godinu, i pored pandemije i pada premije putnog zdravstvenog osiguranja od oko 1,5 milijardi dinara.

Zaključak

Pandemija kovida 19 uticala je na svakodnevni život pojedinca, privrednu aktivnost, globalnu ekonomiju, zdravstveni sistem. Sektor osiguranja, kao značajna delatnost u pogledu učešća u bruto društvenom proizvodu zemalja, takođe je osetio posledice ove zdravstvene krize. Negativan uticaj ogledao se, između ostalog, u padu aktivnosti, solventnosti, likvidnosti, produktivnosti, broja zaposlenih, premije osiguranja po pojedinim vrstama osiguranja, dobiti itd. Međutim, tržište osiguranja Republike Srbije takođe je osetilo posledice pandemije, ali te posledice nisu dovele do pada ukupno ugovorene premije osiguranja i gubitaka u većini kompanija. Zabeležen je očekivan pad premije putnog zdravstvenog osiguranja, koji, iako visok, nije dovoljan da dovede do ukupnog pada premije celokupnog tržišta. Tržište je nastavilo da raste, kao i u godinama pre pandemije, sa nešto manjim procentima. Osiguravajuća društva pozitivno su poslovala i u 2020. godini, uspevši da amortizuju negativne uticaje zdravstvene krize koja je zadesila ceo svet. Premija najpogođenije vrste osiguranja (putno zdravstveno osiguranje) nema značajan uticaj na ostvarenu dobit, odnosno na neto rezultat tržišta, što je u kombinaciji sa izrazitim rastom premije kasko, životnog i dobrovoljnog zdravstvenog osiguranja dovelo do pozitivnih tokova i u godini pandemije, kada su mnoge druge privredne delatnosti beležile gubitke.

Osiguravajuća društva u Republici Srbiji relativno su spremno dočekala pandemiju, te pomoću drugih vrsta osiguranja uspeła da amortizuju gubitke nastale usled velikog pada premije putnog zdravstvenog osiguranja. Panel regresiona analiza potvrdila je nepostojanje uticaja ove premije osiguranja na dobit osiguravajućih društava. Osiguravači u narednom periodu mogu svoje marketinške kampanje usmeriti na druge pakete usluga osiguranja. Preporuka za dalji rad i komercijalizaciju jeste da se osiguravajuća društva usredsrede na usluge kao što su životno i zdravstveno osiguranje, sa uključenim epidemijskim rizicima, kao i na kasko osiguranje vozila, jer su ove vrste osiguranja nadomestile pad premije putnog zdravstvenog osiguranja i obezbedile društvima rast premije osiguranja.

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OPERATIONS OF THE INSURANCE SECTOR IN THE REPUBLIC OF SERBIA IN THE CIRCUMSTANCES OF COVID-19 PANDEMIC

REVIEW ARTICLE

Abstract

Every economic or health crisis forces insurance companies to take into account the sensitivity of their portfolios and adjust their business, notably in terms of proper risk management. This paper examines the effects of the pandemic on the profits of insurance companies and insurance premiums, where the impact of changes in travel health insurance premiums on the realized profits of insurance companies is particularly analysed since the premiums of travel health insurance are most affected by the health crisis. The impact of the pandemic on the insurance sector was explored by a comparative analysis of insurance premiums and profit before and after the pandemic. The analysis of the impact variation of the travel health insurance premium on the realized profit of insurance companies was performed by applying a panel data regression analysis. The obtained results show that the pandemic has not significantly affected the insurance sector in the Republic of Serbia, whereas the impact of changes in travel health insurance premiums on the profit of insurance companies in the Republic of Serbia is also not significant.

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I. Introduction

Insurance companies have been under constant pressure from various crises for years, from economic, political, to the last health crisis in the form of the COVID-19 pandemic. The insurance sector, with its sensitivity in risk management and risk-bearing on behalf of third parties is additionally pressured from regulatory authorities to carefully manage portfolios and investments, as well as the funds collected from policyholders. Given the continued growth of the insurance sector of the Republic of Serbia, it is of great importance to monitor the impact of the health crisis on this continuity, potential changes, and the results of the insurance sector.

Research into the impact of the crisis on the insurance sector, whether economic, health or otherwise, has gained in importance in the last decade.⁴ The increased risk of investments or recessions as a result of economic or health and political crisis is the subject of many researches, aimed at testing the insurance sector and its ability to adapt to the world's previously known crises. Numerous authors have addressed the very fact that insurance companies manage to resist crises and contain the consequences of recession at the time of the Great Recession.⁵ However, as opposed to banking sector, insurance sector has seen less consequences.

The impact of these crises on the insurance sector is multidimensional. It may prove negative for individual companies, but not for all. This impact depends to a large extent on the structure of the insurance company's portfolio, the size of the market, the competition, the starting base, and the level of liberalisation. In addition, the data suggest that the financial crisis had the strongest negative impact to those companies that specialize in a particular service or have extremely low diversification of insurance services.⁶

Experience has shown that the financial crisis has a strong impact on the banking sector, creating the illusion that the solvency of insurance companies during the crisis is sustainable. However, each crisis, even the financial one, has its own short-term and long-term consequences for the insurance sector.⁷ Insurance companies

⁴ Baluch, F., Mutenga, S., Parsons, C. "Insurance, Systemic Risk and Financial Crisis", *The Geneva Papers on Risk and Insurance - Issues and Practice*, 2011, 126-163

⁵ Haegali, J.J. „How insurance markets are bucking the global recession trend“, Swiss Re Institute, 2020

⁶ Vladimir Njegomir, Boris Marović, Rado Maksimović. „The Economic Crisis And The Insurance Industry: The Evidence From The Ex-Yugoslavia Region“, *Economic Annals*, Faculty of Economics, University of Belgrade, 2010. vol. 55(185), pages 129–162.

⁷ Sebastian Schich. „Insurance companies and the financial crisis“, *OECD Journal: Financial Market Trends*, OECD Publishing, vol. 2009(2), pages 123–151.

face a number of challenges after these crises, adapting to newly imposed market demands in the form of new service packages, and the need to change investment policies. The value and structure of the corporate assets have already suffered particular damage following the last major financial crisis. The major challenges that insurance companies face today concern investments, restructuring, and redefining current policies and strategies for further growth and development.⁸

The impact of the pandemic on insurance activities involves complex examination of several different aspects. These are many endogenous and exogenous factors such as consumer behaviour, their decisions, decisions by state regulatory institutions, etc. Adverse effects can be reflected in the decline in insurance premiums and profits, higher underwriting costs or payment of claims in certain types of insurance. The positive effects, on the other hand, in the long term, are increasing the people's awareness of the need for insurance.⁹

The subject of this paper will be the impact of the COVID-19 pandemic on the insurance sector of the Republic of Serbia. The results of examining such impact affect decisions and preparation for potential new crises, with the aim of amortizing their impact on business results (profit, insurance premium, key profitability and liquidity ratios, etc.). The aim of this research is to examine the extent to which the pandemic has affected the business results of insurance companies in the Republic of Serbia. The comparative analysis of insurance premiums, by years and types of insurance, examined the impact of the pandemic on the insurance sector, distribution of insurance premiums and profits, and also the impact of variations in travel health insurance premiums (as the most sensitive type of insurance) on the net income of insurance companies.

The analysis of the impact of the COVID-19 pandemic on the insurance sector of the Republic of Serbia (RS) used the reports of the National Bank of Serbia regarding the premium earned in the ten-year period, in total and by types of insurance.

The comparison of total results includes all insurance companies operating on the RS market, while the impact of changes in travel health insurance premiums will be observed in five insurance companies, according to the criterion of the highest contracted premium (by market share). The observation period is 2011–2020, with an emphasis on business results in the last observed year.

The underlying hypotheses that constitute the basis of this research are:

1. HYPOTHESIS 1: The COVID-19 pandemic has led to a decline in the total earned insurance premium of RS insurance companies;

⁸ Kočović, J., Antić, T., Jovović M., "The Impact of the Global Financial Crisis on the Structure of Investment Portfolios of Insurance Companies", *Ekonomski anali*, Ekonomski fakultet Beograd, 2011, pp 143-161.

⁹ Strupczewski, G., Klonowska, A., "Impact of the COVID -19 pandemic on the global insurance market". In book: *Strategies, models and technologies of economic systems management in the context of international economic integration*, 2020, pp. 230–238, Publisher: Institute of Economics of the Latvian Academy of Science

2. HYPOTHESIS 2: The current health crisis has led to a negative operating result of the RS insurance sector;
3. HYPOTHESIS 3: Travel health insurance premium has no statistically significant impact on the realized profit of RS insurance companies.

The paper consists of three complete segments: the first part of the paper, following the abstract and introduction, is focused on literature review and earlier theoretical and empirical research; the second part of the paper refers to the confirmation of hypotheses 1 and 2, in terms of examining the impact of the pandemic on the operating results of insurance companies in the RS; the third part of the paper contains evidence of the variation impact of the travel health insurance premium on the net result of insurance companies in RS to confirm hypothesis 3.

Literature Overview

Numerous theoreticians have analysed the impact of the current health crisis on both the overall economy and the insurance sector. The results of their studies are systematized according to the nature of the effects of the crisis on insurance premiums, liquidity and profitability of companies, work organization, and numerous other aspects.

Impact on health and life insurance

The impact of the COVID-19 pandemic on the insurance sector, among other things, has been observed in the form of significant changes in health insurance regulations, both private and state compulsory insurance. The long-term nature of these changes, which was omitted in the American regulations, is especially emphasized.¹⁰ The COVID-19 pandemic also pushed insurance companies toward innovating existing and designing new insurance services. These are most often short-term health insurance services with fixed amounts of insurance benefits.¹¹ A survey of a sample of 100 U.S. life insurance companies and over 800,000 insurance policies found that insurance companies made minimal adjustments in response to increased mortality risk, in terms of a slight increase in insurance premiums, especially for smokers older over 75.¹²

Insurance companies in the Republic of Serbia quickly responded and adjusted their insurance terms and conditions to the new pandemic-related risks.

¹⁰ Joshua D. F., Bradley, K., „The COVID-19 Pandemic and Health Insurance Regulation“, *Journal of Insurance Regulation*, 2020, National Association of Insurance Commissioner

¹¹ Pranali, N., Vinita, A.K., „Impact of COVID-19 on Health Insurance Sector“. *International Journal of Scientific Research in Engineering and Management (IJSREM)*, 2020, 2582-393.

¹² Harris, Timothy F., Yelowitz, Aaron, Courtemanche, Charles, 2020. „Did COVID-19 Change Life Insurance Offerings?“, IZA Discussion Papers 13912, Institute of Labor Economics (IZA).

Changes have been made regarding the exclusion from insurance of all those obligations that may be a consequence of epidemic and pandemic risks. It seems that companies in the Republic of Serbia have focused more on excluding and reducing potential future damages than on innovations in terms of including new risks in health and life insurance, business interruption due to a pandemic, and the like.¹³ It could be noticed that new services were missing, except for the coverage of travel health and life insurance. There was also no coverage of business interruption due to the pandemic, insurance of receivables, sick leave of employees, etc. An example of insufficient adjustment of insurance companies can be found in the SARS epidemic, after which most insurance companies excluded epidemics and pandemics from all of their insurance terms and conditions.

Insurance companies in the times of the pandemic place a stronger emphasis on underwriting risks of international travels, especially in countries with a large number of newly infected residents. It is expected that certain grace periods will be applied when concluding insurance contracts. It can also be expected that this pandemic will continue to significantly increase the sales of health insurance policies (including hospitalization coverage, hospital day benefits, and medical aid). In China, sales of these policies doubled during the SARS epidemic.¹⁴

Insurance companies mainly or exclusively focused on life insurance are given another task - to carefully invest the funds collected from life insurance premiums. If the pandemic proves difficult to control, it is these insurers, which are more exposed to mortality that can have significantly higher capital gains.¹⁵ Additional attention must be paid to risk management and diversification of insurance companies' portfolios. Risk diversification would imply a wider range of services, which would mitigate the potential losses of one type of insurance affected, in this case, by the pandemic.

Positive influence of health crisis

Insurance companies in North Macedonia have shown resilience and positive business results despite a strong health crisis that has hit the world.¹⁶ The example of the insurance market in North Macedonia shows that insurance markets around the world did not withstand the pressure of the pandemic, which depended on the structure of the market itself, although underdeveloped. The impact of the COVID-19

¹³ Jovanović, S. O., „Impact of COVID- 19 pandemic on the Insurance Industry“. *Insurance Trends*, 2021, 37(1), 41–69.

¹⁴ Strupczewski, G., Klonowska, A. 2020, pp. 230-238.

¹⁵ Kirti, D., Shin, M. Y., „Impact of COVID-19 on Insurers“. *International Monetary Fund Research*. 2020, pp. 1–11.

¹⁶ Stojkoski, V., Jolajoski, P., Ivanovski, I., „The short-run impact of COVID-19 on the activity in the insurance industry in the Republic of North Macedonia“, 2020, ArXiv.

pandemic on the insurance market of North Macedonia shows 11.69% decrease in the number and amount of reported claims in the first two quarters of 2020, while insurance premiums fell by 11.32% in the same period.

Nigeria's insurance market has also felt the impact of the pandemic, especially in productivity. However, insurance companies in this country saw an increase in the number of clients and insurance premiums during the pandemic, especially in the so-called personal insurance lines i.e. voluntary health insurance and life insurance with additional risks included in COVID coverage.¹⁷ The impact of the pandemic on insurance markets is diverse and depends on the level of development, but also on the portfolio structure of the largest insurance companies. Thus, the markets in the former Yugoslavia still have a dominant share of the compulsory motor insurance premium i.e. MTPL. Therefore, they cannot have the same sensitivity to a pandemic as in some other countries, where other types of insurance dominate the portfolio.

Negative impact of health crisis

Certain emerging markets have shown greater sensitivity of the insurance sector to the pandemic. Thus, the insurance market in Bangladesh raises the issue of liquidity, as one of the most important indicators of the business of insurance companies, which ensures the payment of damages to policyholders. The number of cars sold in 2020, the number of dissolved companies, travels reduced to a minimum, remoteness, and lack of adequate communication in the sales process shrank the activities of insurance companies in Bangladesh and led to a decline in premiums and changes in portfolio and profit structure.¹⁸

However, the pandemic had a significant short-term negative impact on the Chinese insurance market, due to limited marketing, sales channels and reduced demand for homeowners insurance. However, although such an impact is clearly negative, it is significantly higher in property insurance lines than in life and health insurance.¹⁹

The European insurance sector has also felt the effects of the pandemic, as evidenced by the decline in average ROA (return on assets). There has been a significant reduction in ROA in German and Italian insurance companies, as well as a reduction in solvency in the Belgian, French and Italian insurance sectors, while the Polish market has not felt the negative effects of this health crisis. Looking at the

¹⁷ Festus, T., Solanke, F., Olugbamiye, O., Olaleye, B., Ekundayo, O.F., „Effects of COVID-19 pandemic on insurance companies' productivity in Nigeria“. *International Journal of Intellectual Discourse (IJID)*, 2020, pp. 180-189.

¹⁸ Haque, A., Mohona, N. T., Sultana, S., Kulsum, U., „The impact of covid-19 on insurance industry of Bangladesh“. *Indian Journal of Finance and Banking*, 6(1), 2021, 73–85.

¹⁹ Wang, Y., Zhang, D., Xiaoquan, W., Fu, Q., „How does COVID-19 affect China's insurance market?“, *Emerging Markets Finance and Trade*. 2020, 56(10), pp. 2350–2362.

entire insurance market in Europe, it can be concluded that insurance companies have remained solvent and liquid despite the pandemic.²⁰ Insurance companies in these markets must lead to an increase in ROA through significant growth in premiums (both through new services and through the growth of premiums by policy), with the aim of reducing losses.

The Ghanaian insurance industry felt a sudden and unexpected shock due to the obvious lack of preparedness for this type of crisis by the companies operating in this market. There was a decline in profits by 16.6% for the period March-June 2020, as well as an increase in receivables by 38.4% in the same period. Total premiums fell by 17.01%, with only a small number of companies retaining their market share.²¹

However, insurance companies with a health insurance portfolio have suffered a significant blow regarding the payment of claims to hospitals and clinics in the United States. The health care management index fell to 7%, indicating that investors predicted a future significant impact on the health sector. The negative economic outlook for the health sector has led to the inclusion of insurance companies in the federal stimulus package of the United States.²²

The decline in the number of travels also has a significant impact on the companies focused on travel health insurance. This decline, which brings losses (over \$ 1 trillion and over a billion international arrivals less), unequivocally affects the global decline in travel health insurance premiums.²³

The global health crisis is a shock to the Indian insurance sector, which has significantly contributed to the growth and development of this country's economy (7% share in gross domestic product). What is now required of the state regulator is to help the sector return to its original state before the pandemic.²⁴

Impact of health crisis on work organisation of insurance companies

Despite the large number of countries where the health crisis in 2020 did not have significant negative effects on business, better communication between the insurance company and the state (regulator) is necessary. Owing to their risk

²⁰ Puławska, K., „Financial Stability of European Insurance Companies during the COVID-19 Pandemic”. *Journal of Risk and Financial Management*. 2021, 14(6), pp. 1-18.

²¹ Babuna P., Xiaohua Y., Gyllbag A., Awudi A.D., Ngmenbelle D., Dehui B., „Impact of COVID-19 on the insurance industry”. *International Journal of Environmental Research and Public Health*. 2020, 17:5766.

²² Ozili, Peterson & Arun, Thankom., „Spillover of COVID-19: Impact on the Global Economy”. *MPRA Paper* 99317. 2020. University Library of Munich, Germany.

²³ Salehnia, N.Zabihi, S., Mohammad, G.; Safarzaei, K., „The impact of COVID-19 Pandemic on Tourism Industry”: *A Statistical Review in European Countries*. 2021. Conference contribution.

²⁴ Parvathi, V., Lalitha, C., „Impact of Covid/19 on the Indian insurance sector”. *Perspectives on Business Management & Economics*. 2021, 60-65.

transfers and investment activities, insurance companies can make a significant contribution to economic growth, and therefore transparent risk assumptions and controls are needed to ensure solvency and business sustainability.²⁵

Key trends in the growth of online insurance sales (30-40%) were identified, as well as the increase in demand for life and health insurance. The awareness of the importance of life insurance was also raised, and various innovative solutions and additional insurance covers were introduced. The negative effects are reflected in the delayed payments of insurance premiums, namely, the growth of receivables (which influence the reduction in corporate profit through accruals), as well as a lower percentage of policy renewals, and reduced number of new property insurance policies. Also, one of the negative effects of this crisis is the reduction of investments due to financial uncertainty.²⁶

The lockdown oriented insurance companies toward making more use of the automatic insurance contracting, without the personal presence of the seller. Over 26% of them expanded this type of insurance sales. On the other hand, some state regulators asked insurance companies to extend the grace period for insurance premium payments, which was accepted by over 77% of the companies.²⁷

Adapting to new modern IT solutions and platforms has proven to be another challenge. Remoteness, inability to communicate offline, work from home, and lockdowns have forced insurance companies to make a more significant commitment to communicating with customers in a slightly different way from the traditional sales process.²⁸

Deloitte outlines four key impacts of pandemic on the operations of insurance companies: 1) business, financial and customer risk, 2) perception, brand and strategy 3) operational resilience, service delivery and workforce, 4) governance, risk and controls.²⁹

The crisis has led to the relocation of work processes to work from home, but also to online claims reporting, insurance contracting, and overall communication through modern platforms. In the coming period, Human Resource Services will have a special task to measure the efficiency of employees working from home. Insurance companies are additionally adapting their marketing and after-sales process to the new business conditions.

²⁵ Levantesi, S., Piscopo, G., „Insurance Role for Handling the COVID-19 impact on Business and Society“. *Journal of Applied Management and Investments*. 2021, 9(4), 183–191.

²⁶ Babita, Y., Pushpa, S., „Study on the After Effect of Covid-19 Pandemic in Life Insurance Sector in India“. *Journal of Interdisciplinary Cycle Research*. XIII. 2021, 504-510.

²⁷ Society of Actuaries (SOA), „Impact of COVID-19“, *Society of Actuaries Research*. 2020

²⁸ Xia, Y., Li, S., Meng, K., „The Impact of the COVID-19 on the Insurance Industry in China“. *Frontiers in Economics and Management*. 2020, 1(12), 28.

²⁹ Deloitte., „Impact of COVID-19 on the Insurance Sector“, 2020

II. Impact of COVID- 19 Pandemic on the Results of Insurance Sector in the Republic of Serbia

The intensity of the impact of the current pandemic on the RS insurance sector was measured by comparing the key business indicators through the earned insurance premium and the net result.

Looking at the total contracted insurance premium on the RS market (Table 1), we see a decrease in growth, but the market still recorded a growth of 2.3% in 2020 compared to 2019.

Table 1 Insurance premium in RS by years (000 RSD)

Year	Non-life premium	% changes	Life premium	% changes	Total	% changes
2011	47,321,292.00	0.32	9,992,706.00	6.84	57,313,998.00	1.40
2012	49,608,308.00	4.83	11,855,400.00	18.64	61,463,708.00	7.24
2013	46,976,051.00	-5.31	14,065,458.00	18.64	61,041,509.00	-0.69
2014	53,399,931.00	13.67	16,005,074.00	13.79	69,405,005.00	13.70
2015	61,561,694.00	15.28	19,364,294.00	20.99	80,925,988.00	16.60
2016	66,010,278.00	7.23	23,127,708.00	19.43	89,137,986.00	10.15
2017	70,336,633.00	6.55	22,757,361.00	-1.60	93,093,994.00	4.44
2018	76,121,610.00	8.22	23,788,981.00	4.53	99,910,591.00	7.32
2019	82,385,409.00	8.23	25,064,463.00	5.36	107,449,872.00	7.55
2020	83,753,833.00	1.66	26,162,910.00	4.38	109,916,743.00	2.30
Changes average		6.07		11.10		7.00

Source: adapted by the author from www.nbs.rs

Given a huge decline in the number of travels in 2020, a decline in travel health insurance premiums is also expected. Premiums of this type of insurance recorded a decline of over 1.5 billion dinars in 2020, or a decline of almost 61% (Table 2). Such a decline would mean a decline in total insurance premiums, but this was not the case.

Table 2 Premium of travel health insurance by years in 000 RSD

Year	Premium	% changes
2011	733,258.00	-16.29
2012	1,197,433.00	63.30
2013	1,350,068.00	12.75
2014	1,506,657.00	11.60

Year	Premium	% changes
2015	1,712,817.00	13.68
2016	1,848,432.00	7.92
2017	2,080,616.00	12.56
2018	2,287,494.00	9.94
2019	2,478,353.00	8.34
2020	971,141.00	-60.82

Source: adapted by the author from www.nbs.rs

The compulsory motor third party liability insurance premium traditionally accounts for the largest share of the total RS market. This premium did not show a decrease, but still recorded a significantly lower growth of 1.82% in 2020 compared to previous years of observation (Table 3).

Table 3 Compulsory motor third party liability insurance premium in 000 RSD

Year	Premium	% changes
2011	18,709,971.00	-0.55
2012	19,332,284.00	3.33
2013	19,573,648.00	1.25
2014	22,706,165.00	16.00
2015	29,007,378.00	27.75
2016	30,208,399.00	4.14
2017	31,980,243.00	5.87
2018	33,558,552.00	4.94
2019	35,373,139.00	5.41
2020	36,018,025.00	1.82

Source: adapted by the author from www.nbs.rs

Given the decline in economic activity (Serbian Chamber of Commerce, 2021), as well as the state of emergency, automobile Casco insurance premiums were expected to fall significantly in 2020. Although there was a premium growth of over 600 million dinars (Table 4), it is still lower than the growth in previous years. The traditionally negative ratio of premiums and paid damages led to a change in the pricing policy that ensured the above growth, although there was no increase in the number of policies sold.

Table 4 Premium of automobile Casco insurance in 000 RSD

Year	Premium	% changes
2011	7,177,352.00	-5.73
2012	6,927,923.00	-3.48
2013	6,429,888.00	-7.19
2014	6,049,950.00	-5.91
2015	6,229,062.00	2.96
2016	6,916,653.00	11.04
2017	7,791,685.00	12.65
2018	8,982,425.00	15.28
2019	10,335,755.00	15.07
2020	10,961,273.00	6.05

Source: adapted by the author from www.nbs.rs

Voluntary health insurance is the type of insurance with the highest growth in the last 10 years. Modern, especially foreign companies, include in their employment contracts paid private health insurance for their employees as an additional benefit. This type of insurance records a growth of over 18% in 2020, which is in line with global trends of people taking out this type of insurance during the health crisis (Table 5). The premiums have increased to more than 500 million dinars, which together with Casco and life insurance, as well as some other types of property insurance, not only compensated for the huge decline in travel health insurance premium but also provided a growth in total premiums in the RS insurance market in the circumstances of the pandemic.

Table 5 Premium of voluntary health insurance in 000 RSD

Year	Premium	% changes
2011	971,764.00	-5.08
2012	1,083,190.00	11.47
2013	1,158,120.00	6.92
2014	1,324,894.00	14.40
2015	1,585,351.00	19.66
2016	2,229,411.00	40.63
2017	2,859,554.00	28.26
2018	3,465,351.00	21.19
2019	4,581,469.00	32.21
2020	5,416,185.00	18.22

Source: adapted by the author from www.nbs.rs

In line with global trends, the life insurance market is showing similar resilience. Although in 2020 a slightly lower growth was recorded than in 2019 (Table 6), the insurance premium increased by over one billion dinars. Thus, the decline in travel health insurance premiums was completely neutralized, and health insurance again showed positive tendencies and serious and safe business. During the health crisis, there was a significantly higher number of life policies taken out by the population. These policies were innovated by additional coverage in terms of COVID risk, and contributed to the overall growth of premiums and positive business indicators.

Table 6 Premium of life insurance in 000 RSD

Year	Premium	% changes
2011	9,992,709.00	6.84
2012	11,855,400.00	18.64
2013	14,065,460.00	18.64
2014	16,005,073.00	13.79
2015	19,364,294.00	20.99
2016	23,127,709.00	19.43
2017	22,757,361.00	-1.60
2018	23,788,981.00	4.53
2019	25,064,463.00	5.36
2020	26,162,910.00	4.38

Source: adapted by the author from www.nbs.rs

The net result of the RS insurance market in the year of the pandemic shows the stability of the sector and therefore, although lower growth was recorded compared to previous years, the RS insurance companies performed positively (Table 7). The growth in this indicator is 10.85% compared to 2019.

Table 7 Net result of the RS insurance market in 000 RSD

Year	Net profit	Net loss	Net result
2011	1,941,055.00	1,383,224.00	557,831.00
2012	2,371,872.00	1,166,591.00	1,205,281.00
2013	2,229,168.00	2,272,416.00	-43,248.00
2014	2,900,478.00	2,473,165.00	427,313.00
2015	4,625,617.00	1,721,355.00	2,904,262.00
2016	6,009,647.00	286,508.00	5,723,139.00
2017	6,634,512.00	202,007.00	6,432,505.00

Year	Net profit	Net loss	Net result
2018	8,877,837.00	19,941.00	8,857,896.00
2019	11,680,788.00	38,067.00	11,642,721.00
2020	12,986,202.00	79,211.00	12,906,991.00

Source: adapted by the author from www.nbs.rs

In view of the above, it can be concluded that the hypotheses 1) and 2) originally set in this paper must be rejected. The data from the above tables show that the COVID-19 pandemic has an impact on the earned insurance premium and net result of the RS insurance market, in terms of lower growth, but this impact did not lead to a decrease in premiums compared to previous years, nor to the loss and negative RS market results. Despite the drop in travel health insurance premiums, insurance companies managed to achieve an increase in total premiums, as well as a positive result and an increase in net results compared to 2019. These results are indicators of controlled operations and strict reinsurance, risk management and investment policies.

III. Research Methodology

The reports from the NBS website provided the necessary information for the analysis of the impact of travel health insurance premium trends on the net result of insurance companies on the RS market. In accordance with the type of the available data and the sensitivity of the issue, the research was conducted by combining qualitative and quantitative methodology. The research results are presented using correlation analysis and panel data regression.

To detect the impact of the decline in travel health insurance premiums on total realized profit, a model was developed in which there are four variables, three of which are independent and one dependent.

The independent variables are:

1. Premium of compulsory motor vehicle insurance (liability) – MVL
2. Premium of automobile Casco insurance – AC
3. Premium of travel health insurance – THI.

The dependent variable is:

1. Net result of insurance market– NR.

When developing the model, the identification of variables was performed first. Based on economic logic, NR (Y) was chosen as the dependent variable, and MVL, AC, THI i.e. ,, , were chosen respectively as explanatory variables. The possibility of an error in predicting Y in the model was marked by e. Slope coefficients are β_1 , β_2 , β_3 , while the constant is marked as β_0 . Therefore, the model can be presented as follows:

$$Y(NR) = \beta_0 + \beta_1^* + \beta_2^* + \beta_3 + e,$$

namely $NR = \beta_0 + \beta_1^* + \beta_2^* + \beta_3 + e$

Empirical research was conducted on a sample of five insurance companies that account for 78% of the total RS insurance market, for a period of 10 years. Table 8 shows descriptive statistics for all 50 observations, i.e. minimum and maximum values of the observed variables, their arithmetic mean and standard deviation. Due to the nature of the crisis, the aim is to examine the impact of sensitive types of insurance (travel health insurance) on the overall market result in terms of net profit.

Table 8 Descriptive statistics (in 000 RSD)

	Number of observations	Minimum values	Maximum values	Arithmetic mean	Standard deviation
MVL	50	290188.00	12455539.00	4152505.0000	3390395.06101
AC	50	199581.00	2796087.00	1236409.2400	611497.69719
THI	50	18761.00	567283.00	227221.9200	136097.19139
NR	50	-1373943.00	8977666.00	998116.6800	1659689.59272
Valid N (listwise)	50				

Source: Author's calculation

IV. Impact of the Change in the Travel Health Insurance Premium on the Net Result of the Insurance Market of the Republic of Serbia

This impact will be explored through panel data regression analysis, using the software package SPSS. This type of regression analysis has numerous advantages over traditional regression models and time series analyses, with a greater degree of freedom and reduced collinearity between the observed variables, thus improving the efficiency of econometric estimations.³⁰

The advantages of panel data analysis lie in uncovering dynamic relationships, controlling the impact of omitted variables, generating more accurate predictions for individual outcomes by pooling the data, providing micro foundations for aggregate data analysis, simplifying statistical inference, analysing nonstationary time series, measurement errors, etc.³¹

Bearing in mind that there is an identical number of data for the observation unit in each year of observation, balanced panel data were used. Due to the lack of consistency of the independent variables used over time, a fixed effects model will be used to assess the impact of the independent variables on the observed dependent variables.³²

³⁰ Hsiao, C. *Analysis of Panel Data* (Econometric Society Monographs), Cambridge, 2014

³¹ Hsiao, C., "Panel data analysis—advantages and challenges". *TEST* 16, 2007, 1–22.

³² Knežević, A. *Implementation of panel models in identifying factors of business success in manufacturing companies* (Doctoral Dissertation). Novi Sad: Novi Sad University – Faculty of Technical Science, 2015, pp. 20.

1.1. Impact of Variation of Travel Health Insurance Premium on the Realized Profit of Insurance Companies

The justification for examining this impact is reflected in the fact that this type of insurance recorded a huge decline in insurance premiums in 2020 due to the travel ban.

By testing the normality of the data distribution (Shapiro-Wilk and Kolmogorov-Smirnov tests), it was determined that the observed data have a normal distribution. Based on Table 9 and the Spearman correlation test, it can be concluded that there is a high correlation with adequate statistical significance between the motor liability premium and the net result of the insurance market (.903, with maximum statistical significance). There is a slightly smaller but also high correlation between the total Casco insurance premium and the net result (0.830), with adequate statistical significance (0.003). On the other hand, it can be concluded that there is a statistically most significant correlation between the net result of the RS insurance market and travel health insurance premiums with a correlation coefficient of 0.442, however, statistically insignificant.

Table 9 Correlation analysis results (Spearman Coefficient)

		MVL	AC	THI	NR
MVL	Correlation coefficient	1	.661*	0.564	.903**
	Sig	.	0.038	0.090	0.000
AC	Correlation coefficient	.661*	1	0.164	.830**
	Sig	0.038	.	0.651	0.003
THI	Correlation coefficient	0.564	0.164	1	0.442
	Sig	0.090	0.651	.	0.200
NR	Correlation coefficient	.903**	.830**	0.442	1
	Sig	0.000	0.003	0.200	.

*correlation significant with sig less than 0.05

** correlation significant with sig less than 0.01

Source: Author's calculation

Upon applying Breusch-Pagan and Koenker test³³ the absence of heteroscedasticity was determined (Table 10), having in mind Sig values specified in the Table that must be greater than .05.

Table 10 BP and Koenker heteroscedasticity test

Test	LM	Sig
BP	6.103	0.347
Koenker	3.775	0.229

Source: Author's calculation

³³ Hsiao C. pp. 148.

Table 11 shows the results of the panel data analysis, i.e. the results of the examination of the impact of premium variations of different types of insurance on the net result of the RS market.

Table 11 Regression model – NR independent variable

Variable	NR - net result		
	Beta	Sig.	VIF
MVL	0.547	0	4.445
AC	0.521	0	2.885
THI	-0.006	0.905	2.050
R ²	0.992		
Adjusted R ²	0.989		
Sig.	0		

Source: Author's calculation

Based on the results of the panel regression analysis, it can be concluded that the R square coefficient of 0.992 indicates that this model, i.e. the impact, can be 99% attributed to MVL, AC and THI premium, with a maximum statistical significance of .000 (Table 11).

The multicollinearity test (VIF values, Table 11) showed that there is no high interdependence between the observed independent variables.

The impact of the change in the compulsory motor vehicle insurance premium (MVI) on the net result of insurance companies shown in Table 11 is .547, so any increase in this premium by one dinar leads to an increase in the net result by .547 dinars, with a maximum statistical significance of .000. On the other hand, there is a significant impact of Casco insurance premium movements (0.521). Although Table 11 shows a negative impact of the variation in travel health insurance premium on the net result, the effect is statistically insignificant, which is adequate to the last year's results of the insurance market in RS, where the premium of this type of insurance did not lead to a decrease in net results.

These tests confirmed Hypothesis 3 on the absence of a statistically significant impact of the movement of travel health insurance premiums on the net result. Insurance companies on the RS market achieved a profit growth of about 10% compared to 2019, despite the pandemic and the drop in travel health insurance premiums of about 1.5 billion dinars.

Conclusion

The COVID- 19 pandemic affected the daily life of an individual, economic activities, the global economy, and the health care system. The insurance sector, as

an activity with a significant share in the gross domestic product of countries, also felt the consequences of this health crisis. The negative impact was reflected, among other things, in the decline in activity, solvency, liquidity, productivity, number of employees, insurance premiums by certain types of insurance, profit, etc. However, the insurance market of the Republic of Serbia also felt the consequences of the pandemic, but in most companies, those consequences did not lead to a decline in the total contracted insurance premiums and losses. The expected decline in travel health insurance premiums was recorded, which, although high, was not sufficient to produce an overall decline in the premium of the entire market. The market continued to grow, as in the years before the pandemic, with slightly lower percentages. Insurance companies operated with positive results even in 2020, managing to alleviate negative effects of the health crisis that hit the whole world. Premiums of the most affected type of insurance (travel health insurance) do not have a significant impact on profits, i.e. the net result of the market, which in combination with distinct growth of Casco, life and voluntary health insurance premiums led to positive trends in the year of the pandemic, when many other economic activities recorded losses.

Insurance companies in the Republic of Serbia were relatively prepared when the pandemic broke out, and with the help of other types of insurance, they managed to amortize the losses caused by a large drop in travel health insurance premiums. The panel data regression analysis confirmed the lack of impact of this insurance premium on the profits of insurance companies. In the coming period, insurers can focus their marketing campaigns on other insurance service packages. The recommendation for further work and commercialization is that insurance companies focus on services such as life and health insurance, including epidemic risks, as well as automobile Casco insurance, as these types of insurance have offset the decline in travel health insurance premiums and ensured for insurance companies the growth of insurance premiums.

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