

## Alexandra Ioana Daniela Rus

Babes-Bolyai University, Cluj-Napoca, Romania  
Department of Finance, Faculty of Economics and Business Administration  
E-mail: alexandra.rus@econ.ubbcluj.ro

## Iulia Brici

Babes-Bolyai University, Cluj-Napoca, Romania  
Department of Finance, Faculty of Economics and Business Administration  
E-mail: iulia.brici@econ.ubbcluj.ro

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# CURRENT CHALLENGES ON THE INTERNATIONAL REINSURANCE MARKET

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### **Abstract**

*The aim of this paper is to present the analysis of the international reinsurance market. After we have made a literature review, we highlighted a brief history of it and then a brief analysis of the main actors operating in the international reinsurance market. Following this analysis, a top of reinsurance companies was made, then a classification and also the current challenges faced by the global reinsurance market, the Covid-19 crisis, were presented. We have studied the impact of the coronavirus pandemic on the companies mentioned before as being part of the top ranking. The results of the study showed that the crisis had a major impact, destabilizing the reinsurance market.*

**Keywords:** *reinsurance, international market, pandemic*

## **1. INTRODUCTION**

Nowadays, in the time that we are living, all of us try to protect ourselves from the risks that are looking for us after the corner. We are trying to be more secured, to live in safety and that's why we have to take all the precaution measures and, most important, stay healthy. Well, not only us, the human being, are trying to do this, the companies also takes their precaution measures in order to be insured.

Us, the human being, are making insurance policy in order to protect the risks that can occur to us, the companies take out insurance in order to protect their business. So, even if we are human beings or we have a company, we try to protect our interests for the risks than can happen to insurance companies. But, the question is: 'The insurance companies can make an insurance for themselves?' and the answer is 'Yes'. And here enters on the scene the most important actors, namely 'reinsurance companies'.

Now let's focus our attention on the pandemic generated by the COVID-19 coronavirus. This pandemic has a significant impact on health system, financial markets and vulnerable

industries such as manufacturing, tourism and hospitality and a lot of other fields of activity were affected.

In order to try to ensure an efficient healthcare response during this pandemic, the national governments have tried to engage in reinsurance contracts at state level to provide financial relief to the state and the population (Sahin et al., 2020).

We found out that in the literature there are not many articles written on this topic, so we do not have a significant reference point for this approach. This is exactly the gap in the literature that we have found. Of course, in our future work we intend to analyze more closely the reinsurers market for longer periods of time and we also want to see its evolution after the pandemic period. The paper is further divided as follows: the second section presents the challenges on the reinsurers market, the third section is attributed to certain comparisons and results and in the last section are the conclusions.

## 2. CHALLENGES ON REINSURANCE MARKET

According to the Corporate Finance Institute, reinsurance means insurance of the insurance companies. The reinsurance companies receive insurance liabilities from other insurance companies. Insurance companies need reinsurance companies for several reasons. Firstly, they can transfer risk, and in this way they can issue higher limits policies because the risk is taken by the reinsurance company. By transferring debts to the reinsurer, insurers' income can be made more predictable, in order to prevent large losses. From the same reason, insurers can surely invest their capital in order to increase their revenues. Reinsurers also provide insurers to underwrite more policies, because a big percent of their liabilities are transferred to the reinsurance companies. In earthquakes and hurricanes situations, an insurer can go to bankruptcy, but if it shifts part of its liabilities to the reinsurance company, it will succeed to go through such events. The rate charged by the reinsurer to the insurer is lower than that requested by a regular customer. Reinsurance companies have their own risk assessment models, so they can accept a lower insurance premium if the insurer decides it is less risky.

A lot of centuries, reinsurance has been placed in shadow corner, but over time it has been showed up in the light for the general public, as a key of risk transfer and in the top of risk management. The time when reinsurance enjoyed recognition is was in the middle of 1980s when the insurance industry was facing a boom in liability insurance claims. Than the impact increased in 1992, after Hurricane Andrew caused extensive damage to both liability insurance and property insurance.

Another situation when reinsurance became visible was correlated with the events of September 11<sup>th</sup>, 2001. These marked the biggest nightmare of insurance industry, resulting in various losses (lives, property, income, air damage and so on).

The market conditions determined the reinsurance companies to create their short and long term strategies (Ciumaş, 2009). According to a report of European Commission for the 2017-2018 we found out that there were a lot of catastrophes in the entire world (Italy, Spain, Greece, France, Poland etc.) and the reinsurance sector is facing with poor business conditions due to the fact that challenges from 2017 have not decrease. Even if the growth rate has been grew slight in 2018, the function conditions for the global reinsurance have remained difficult in time (European Commission 2020).

Even of the losses suffered in 2017 have reduced the revenues for some the reinsurance companies for others this year became an capital event. The sector has demonstrated its strength, managing the record catastrophic year with a relatively small net loss, although the impact varied considerably from one reinsurer to another.

When the situation seems to be much more stable there we entered in 'Covid-Area' and the things go worst for the reinsurance market.

In order to try to present the situation before and in time of Covid period we will present the top of the global reinsurers in 2017, 2018 and in 2019 and also the ratings given to all existing reinsurance companies classified by belonging regions for 2017 and 2019.

Table 1 presents the situation of the rankings made by S& P for the top of 20 Global Reinsurers in 2017.

Table 1 Top 20 Global Reinsurers 2017 Ranking per Gross Premiums Written

Rank	Company	Life and non-life premiums		Non-life premiums		Ratios		
		Gross	Net	Gross	Net	Loss	Expenses	Combined
1.	Munich Reinsurance	37 821	36 378	21 377	20 330	80.5%	33.5%	114.0%
2.	Swiss Re	34 775	32 316	20 371	19 631	82.3%	33.1%	115.4%
3.	Berkshire Hathaway	22 740	22 740	17 815	17 815	NA	NA	116.4%
4.	Hannover Rück	21 314	18 727	12 832	10 973	71.3%	27.8%	99.1%
5.	SCOR	17 718	16 130	7 218	6 468	71.0%	32.7%	103.7%
6.	Lloyd's	14 250	10 726	14 250	10 726	83.8%	33.3%	117.2%
7.	Reinsurance Group of America	10 704	9 841	NA	NA	NA	NA	NA
8.	China Re	10 435	9 974	3 628	3 509	62.6%	41.3%	103.9%
9.	Great West Lifeco	7 924	7 823	NA	NA	NA	NA	NA
10.	Korean Re	6 775	4 720	5 958	3 988	77.7%	18.7%	96.4%
11.	General Insurance Corporation of India	6 497	5 798	6 430	5 741	86.3%	17.5%	103.8%
12.	PartnerRe	5 588	5 120	4 189	3 776	69.8%	29.5%	99.3%
13.	Everest Re	5 115	4 614	5 115	4 614	76.6%	26.5%	103.1%
14.	XL Group	4 916	3 976	4 682	3 964	79.9%	31.5%	111.3%
15.	Transatlantic Holdings	4 211	3 810	4 211	3 810	73.1%	33.8%	106.9%
16.	MS&AD	3 385	NA	3 385	NA	NA	NA	NA
17.	R+V Versicherung AG	3 071	3 011	3 071	3 011	73.8%	25.3%	99.1%
18.	MAPFRE RE	2 812	2 517	2 812	2 517	73.6%	23.2%	96.8%
19.	RenaissanceRe	2 798	1 871	2 798	1 871	108.4%	29.6%	137.9%
20.	The Toa Reinsurance	2 505	2 198	2 505	2 198	70.1%	26.3%	96.4%

Source : A. M. Best

In table 1 we can see that we have 11 companies with combined ratios higher than 100% and 9 lower than 100%. The higher combined ratio belongs to Renaissance Re with a value of 137,9 % but the company is the penultimate in the top. The lowest combined ratios belongs to Korean Re and The Toa Reinsurance with a value of 96,4 %.

Table 2 Top 20 Global Reinsurers 2018- Ranking per Gross Premiums Written

Rank	Company Name	Life and non-life premiums		Non-life premiums		Ratios		
		Gross	Net	Gross	Net	Loss	Expense	Combined
1.	Swiss Re Ltd.	36,406	34,042	20,864	20,220	74.2	32.4	106.6
2.	Munich Reinsurance Company	35,814	34,515	23,395	22,570	65.2	34.2	99.4
3.	Hannover Rück SE <sup>4</sup>	21,952	19,791	13,709	12,368	66.9	29.5	96.4
4.	SCOR S.E.	17,466	15,773	7,069	6,115	66.5	32.8	99.3
5.	Berkshire Hathaway Inc.	15,376	15,376	9,930	9,930	88.6	21.9	110.4
6.	Lloyd's <sup>5,6</sup>	14,064	9,926	14,064	9,926	72.2	33.8	106.0
7.	China Reinsurance (Group) Corporation	11,564	10,681	3,942	3,809	58.0	40.9	98.8
8.	Reinsurance Group of America Inc.	11,341	10,544	N/A	N/A	N/A	N/A	N/A
9.	Great West Lifeco	7,737	7,647	N/A	N/A	N/A	N/A	N/A
10.	Korean Reinsurance Company	6,803	4,786	5,972	4,058	83.7	17.8	101.5
11.	General Insurance Corporation of India <sup>7</sup>	6,582	5,684	6,503	5,611	88.4	16.9	105.3
12.	Partnerre Ltd.	6,300	5,803	5,065	4,592	73.7	28.1	101.8
13.	Everest Re Group Ltd.	6,225	5,706	6,225	5,706	86.6	26.3	113.0
14.	XL Bermuda Ltd.	5,219	4,135	5,002	4,124	80.6	32.2	112.8
15.	Transatlantic Holdings, Inc	4,451	3,969	4,451	3,969	72.8	32.6	105.4
16.	MS&AD Insurance Group Holdings, Inc. <sup>7,8</sup>	3,657	N/A	3,657	N/A	N/A	N/A	N/A
17.	Renaissance Re Holdings Ltd.	3,310	2,132	3,310	2,132	56.7	30.9	87.6
18.	R+V Versicherung AG <sup>9</sup>	3,231	3,164	3,201	3,146	73.8	25.3	99.1
19.	MAPFRE RE, Compania de Reaseguros S.A. <sup>10</sup>	3,215	2,654	2,602	2,045	71.6	26.7	98.3
20.	AXIS Capital Holdings Limited	3,112	2,334	3,112	2,334	69.8	28.6	98.4

Source: A. M. Best

In the table 2 we have also the top of the reinsurance companies for the second analyzed year, 2018. Here we have only 9 companies with a combined ratio higher than 100 % and 11 with combined ratios lower than 100%. The higher value of the combined ratio is attributed to Everest Re Group (113%) and the lowest value belongs to Renaissance Re (87,6%).

Table 3 Top 20 Global Reinsurers 2019 Ranking per Gross Premiums Written

Ranking	Company	Life & Non-Life		Non-Life Only		Ratio		
		Gross	Net	Gross	Net	Loss	Expenses	Combined
1.	Swiss Re Ltd.	\$42,228	\$39,649	\$26,095	\$25,135	79.7%	31.7%	111.4%
2.	Munich Reinsurance Company	\$37,864	\$35,282	\$24,742	\$23,455	66.7%	34.4%	101%
3.	Hannover Ruck S.E.4	\$25,309	\$22,096	\$16,555	\$14,333	69%	29.5%	98.5%
4.	SCOR S.E.	\$18,302	\$16,176	\$8,005	\$6,826	68.1%	30.9%	99%
5.	Berkshire Hathway Inc.	\$16,089	\$16,089	\$11,112	\$11,112	86.6%	25.1%	111.7%
6.	Lloyd's	\$14,978	\$10,433	\$14,978	\$10,433	71%	34.5%	105.5%
7.	China Reinsurance (Group) Corporation	\$13,161	\$12,196	\$5,218	\$4,820	65%	36.4%	101.4%
8.	Reinsurance Group of America Inc.	\$12,150	\$11,297	N/A	N/A	N/A	N/A	N/A
9.	Great West Lifeco	\$10,149	\$10,055	N/A	N/A	N/A	N/A	N/A
10.	PartnerRe Ltd.	\$7,285	\$6,909	\$5,792	\$5,439	72.4%	28%	100.4%
11.	Korean Reinsurance Company	\$6,963	\$4,785	\$6,157	\$4,079	85.9%	14.9%	100.8%
12.	General Insurance Corporation of India	\$6,862	\$6,229	\$6,735	\$6,109	97.2%	18.2%	115.5%
13.	Everest Re Group Ltd.	\$6,356	\$5,732	\$6,356	\$5,732	66.9%	28.4%	95.4%
14.	XL Bermuda Ltd.	\$5,010	\$4,252	\$5,010	\$4,252	65.4%	34.5%	99.9%
15.	Transatlantic Holdings, Inc.	\$4,946	\$4,495	\$4,946	\$4,495	68.4%	32.5%	100.9%
16.	Renaissance Re Holdings Ltd.	\$4,808	\$3,381	\$4,808	\$3,381	62.8%	29.5%	92.3%
17.	MS& AD Insurance Group Holdings Inc.	\$4,188	N/A	\$4,188	N/A	N/A	N/A	N/A
18.	MAPFRE RE, Compañía de Reaseguros S.A.	\$3,313	\$2,690	\$2,716	\$2,100	77.8%	24.2%	102.1%
19.	Axis Capital Holdings Limited	\$3,223	\$2,280	\$3,223	\$2,280	73.7%	27.5%	101.2%
20.	R+V Versicherung AG	\$3,160	\$3,160	\$3,160	\$3,160	78.6%	24.3%	102.9%

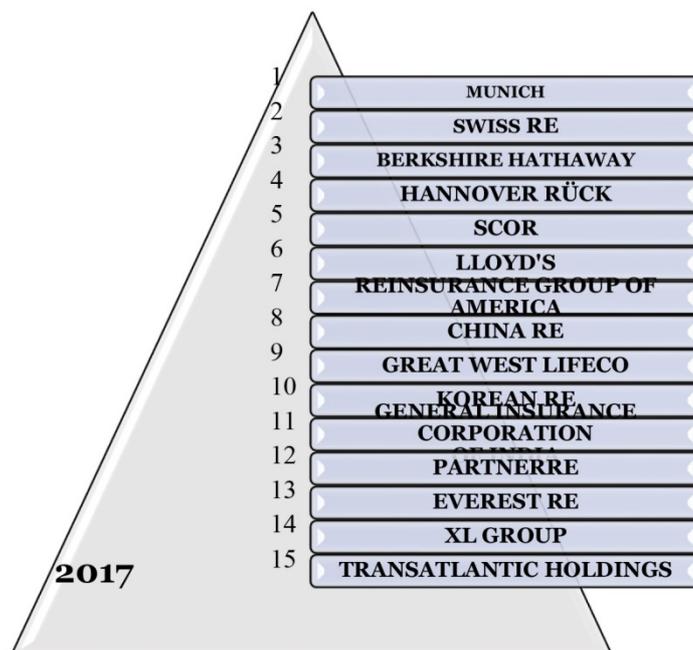
Source: <https://www.atlas-mag.net/en/article/top-50-global-reinsurers-ranking-of-2019>

In the table 3 we can see that we have 12 companies with combined ratios higher than 100% and 8 lower than 100%. The highest value belongs to General Insurance Corporation of India (115,5%) and the lowest value belongs to Renaissance Re (92,3%).

We can see that in 2017 Renaissance Re had the highest value of the combined ratio but in 2019 it has the lowest value.

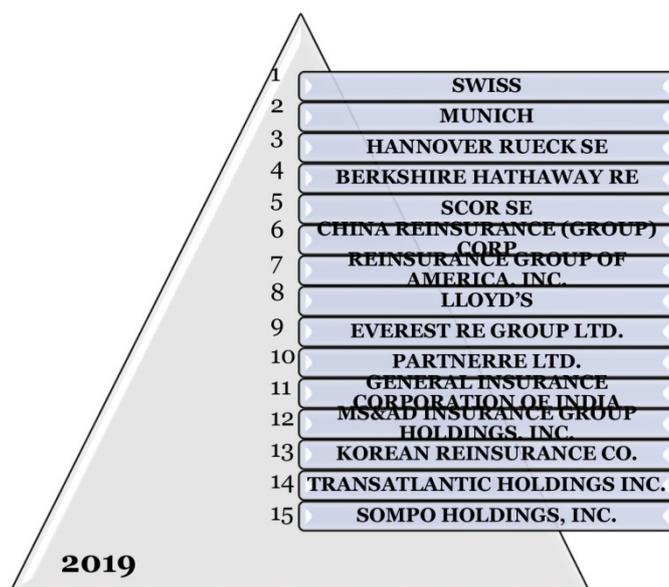
### 3. COMPARISON AND RESULTS BETWEEN 2017, 2018 AND 2019

In order to illustrate better the top of the reinsurance company we have presented above the 15 reinsurance companies for the first and the last analyses years. The ranking was made based on gross premium written.



Source: author's work based on A.M Best data

Figure 1 Top 15 reinsurance companies



Source: author's work based on A.M Best data

Figure 2 Top 15 reinsurance companies

In what concern the figure 1 and figure 2 was made a top of the 15 reinsurance companies for the year 2017 and 2019. In 2017 the first three positions are occupied by Munich Reinsurance, Swiss Re and Berkshire Hathaway. And in what concern the year 2019 the first three positions are occupied by Munich Reinsurance, Swiss Re and Hannover Hathaway Re.

Next, after a literature research we have found that for the reinsurers were given ratings by S&P Global Ratings.

Table 4 Global Ratings

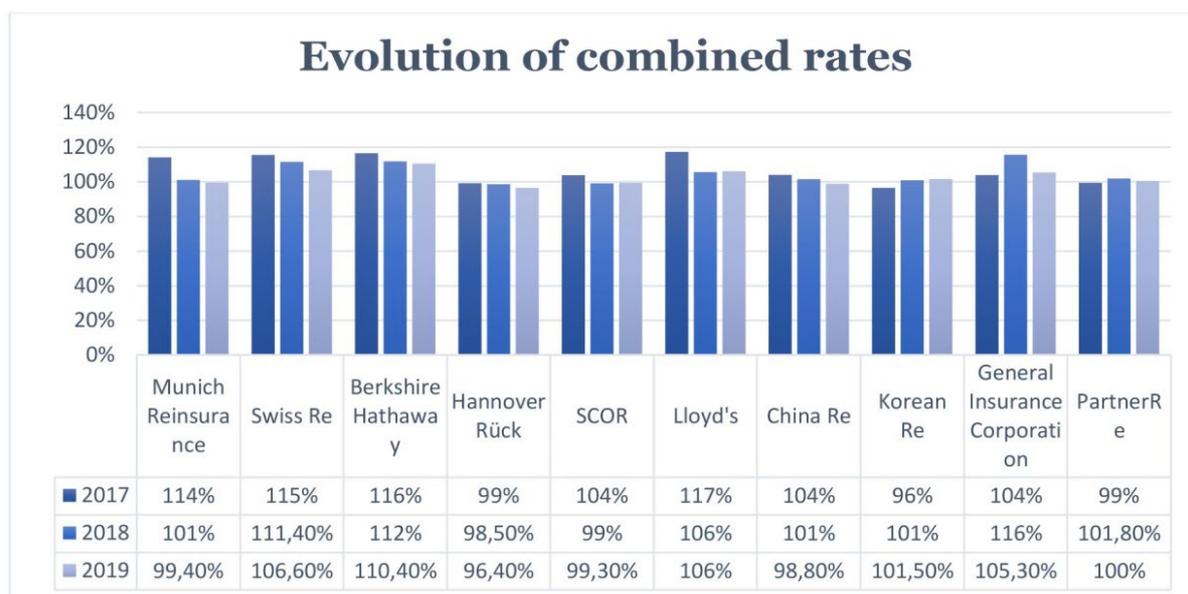
High ranked reinsurance companies				
Reinsurance company	Region	2017	2019	Evolution
General Reinsurance Life Australia Ltd.	Australia	AA+	AA+	stable
General Reinsurance Australia Ltd.		AA+	AA+	stable
Terra Brasis Resseguros	Brazil	brA	brAA+	↑
General Reinsurance AG	Germany	AA+	AA+	stable
National Indemnity Co.	United States	AA+	AA+	stable
General Reinsurance Corp.		AA+	AA+	stable
General Re Life Corp.		AA+	AA+	stable
Berkshire Hathaway Life Insurance Co. of NE		---	AA+	new
Low ranked reinsurance companies				
Reinsurance company	Region	2017	2019	Evolution
Eurasia Insurance Co.	Kazakhstan	BB+	BBB-	↑
Sogaz	Russia	BB+	BBB	↑
Ingosstrakh Insurance Co.		BB+	BBB-	↑
GIC Re South	South Africa	BB+	BB+	stable

Source: author's work after S&P Global Ratings data (Bender, 2019 & 2020 reports)

According to the Global Reinsurance Highlights reports for 2017 and 2019, developed by S&P Global Ratings, ratings were given to all existing reinsurance companies, being classified by belonging regions. In the upper part of the table below we can find highlighted the companies which received the highest rated rating, and in the lower part the companies with the lowest rating.

We can see that among those who received the AA+ rating which means, in the interpretation of the S&P algorithm, high quality with very low credit risk, but susceptibility to long-term risks, most companies keep their rating in 2019 identical to the rating received in 2017. However, we have two exceptions. The reinsurance company Terra Brasis Resseguros from Brazil is improving its situation in 2019 compared to 2017 and the company Berkshire Hathaway Life Insurance Co. of NE from United States recently appeared on the market in 2019.

On the other hand, among the companies that received the lowest rating, namely BB+, which means that the reinsurance company faces major ongoing uncertainties and exposure to adverse business, financial or economic conditions, explained as inadequate capacity to meet its financial commitments, only GIC Re South from South Africa maintains its rating throughout the analysis period. The other companies are improving their situation in 2019, moving from BB + to BBB-, which means adequate capacity to meet its financial commitments, but adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitments.



Source: author's work

Figure 3 Combined rates 2017 vs. 2019

In 2017, the companies Swiss Re, Berkshire Hathaway and Lloyd's had register the highest rates of combined rates: 115%, 116% and respectively 117%. On the opposite side of the top, we can find the lowest values of the combined rates at Korean Re, Hannover Rück and Partner Re, of 96% and 99%.

In 2018, the higher rates were registered by Berkshire Hathaway (112%), Swiss Re (111.4%) and General Insurance Corporation (116%). The lower values were registered by Hannover Rück (98.5%) and SCOR (99%).

In 2019, Berkshire Hathaway Inc. (110.4%) and Swiss Re (116.6%) recorded the highest values of the combined rates, when Hannover Rück and China Re had the lowest values, respectively 96.4% and 98.8%.

As a general conclusion of this comparative analysis, almost all the top 10 companies registered decreases towards the end of the analyzed period, at the beginning of the pandemic, but there are only two exceptions, namely SCOR and Korean Re which in 2019 registered increases of 0.3 and 0.5 compared to 2018, which is insignificant from an economic point of view.

Standard & Poor Global Rating Company made an interesting research on the changes that pandemic took into the re/insurance market. According to their article, the impact of pandemic can be felt in the volatility of capital markets and also in the decreasing premium growth prospects. S&P expects losses related to business interruption, event cancellations, all these being picked in charge by reinsurance companies. This fact means that insurance companies won't be directly significant affected. What can bring more important problems to insurers are the extremely low interest rates, which are the biggest source of risk, because the rentability of assets is fastly decreasing too.

Reinsurance News (2020), in collaboration with Artemis (a company which covers catastrophe bonds, insurance-linked securities, alternative reinsurance capital, risk transfer, investments, longevity and weather risk markets) developed and launched a survey on the initial implications of COVID-19 pandemic on insurance and reinsurance global market. More than 50% of the respondents had the opinion that underwriting losses is the main concern that reinsurers face because of the pandemic, and mostly talking about the non-life side. Also 27.3% of the

respondents said that non-life underwriting loss is between \$80 and \$100 billions. Asked about how long will it take to fully understand the real impact of pandemic on the re/insurance industry, the respondents (almost 61% of them) responded that it will take 2 to 5 years, in their opinion.

According to Business Wire (2021) the COVID-19 pandemic had a several impact on reinsurance global market. The specialists in the field predict that the reinsurance international market will need year of recover. The complete recover process will end near 2030. After the pandemic, companies like Axa, Swiss Re, Munich Re, Hannover Re or SCOR Re still take a seat in the top 10 reinsurers.

The expected growth in 2021 from 2021 was 8.1%, but the exact result will be seen in the annual report, at the end of the year. This percentage may be different from the expectations due to COVID-19 impact. Reinsurance companies began to integrate in their activity blockchain technology, fact that can reduce some of their costs, but at the same time, can increase security and efficiency. Experts predict that blockchain technology can save \$5 billion globally.

According to Actuarial Post, a newspaper from UK, the pandemic also has a bright side. It can represent a chance for knows reinsurance companie, but also for some new entry companies. The coverage of the risks caused by COVID-19 was previously offered by the reinsurers, but with a limited takeover. Post-Covid-19, insurers can adjust the value of coverage. Both insurers and reinsurers will have to evaluate the terms and conditions and determine whether or not they are adequate following the actual living in the pandemic and its effects.

#### **4. CONCLUSIONS**

In this study, we have tried to make an analysis between the period 2017 and 2019. Here we tried to catch the challenges before COVID-2019 pandemic and also in the first year when it start for the reinsurance companies. Taking into account the analyzed period the first problems for these kind of companies appeared in 2017 when they faced a lot of natural disasters in the entire world, in countries like: Italy, Spain, Greece, France, Poland etc. The reinsurance sector faced with poor business conditions due to the fact that challenges from 2017 have not decrease. Even if the growth rate has been grew slight in 2018, the function conditions for the global reinsurance have remained difficult in time. When the sector thought that it will enter into an ascending trendline appear the coronavirus- COVID-19 and the problems just began.

Along our study,we have made a top of reinsurance companies, then we have done a classification and then we have presented the current challenges faced by the global reinsurance market, during the Covid-19 crisis. We have studied the impact of the coronavirus pandemic on the companies mentioned before as being part of the top ranking.

In order to highlight the rank of the reinsurance companies, there were made in addition to the tables presented on the special insurance databases two figures which show the hierarchical classifications of the first 15 main actors from the international reinsurance market.

In this way we could saw the changes that pandemic ciris affected the reinsurance sector, problems which the reinsurance market never faced before.

In this way we made a hierarchical classification of the main players on the international reinsurance market, comparing the first ones from 2017 to 2019. Their positioning in the top took into account the volume of gross premiums written annually. Then, based on the ratings provided by S&P Global Ratings, we made an analysis at the beginning and at the end of the analyzed period. This time, we also took into account the actors from the top of the pyramid, but also the lowest ranked. Also, with the help of the chart, in which we analyzed the combined rates, we wanted to highlight the first and the last ranked ones.

In terms of gross premium written the first two places of the top are occupied by Swiss Re and Munich Re, along the entire analyzed period. In what concern the combined rates, at the top of the pyramid we can find the Berkshire Hathaway and Swiss Re. Making an overview we can conclude that the only one which owns one of the first places in every top is the reinsurance company Swiss Re.

The results of the study showed that the crisis had a major impact, destabilizing the reinsurance market.

However, during our study we encountered some limitations due to the fact that the temporal image on which we focused our attention was the pre-pandemic period and its beginning. Very interesting to analyze would be the period in which the pandemic most strongly affected all sectors of the economy. Of course, another extremely useful aspect for the literature would be to extend the analysis period by more than 5 years in order to try to capture the true effects of the pandemic on the international reinsurance market. These two proposals remain for us lines of future research.

### Acknowledgement

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### REFERENCES

- Actuarial Post, Covid19 and the impact on the reinsurance market, available at: <https://www.actuarialpost.co.uk/article/covid19-and-the-impact-on-the-reinsurance-market-19219.htm>, accessed on 2<sup>nd</sup> of June 2021
- AM Best Company, <http://www.ambest.com/home>, accessed on: 2<sup>nd</sup> of April 2021
- Atlas Magazine, Insurance News Around the World, <https://www.atlas-mag.net/en/article/top-50-global-reinsurers-ranking-of-2019>, accessed on 27<sup>th</sup> of March 2021
- Bender J., et al (2019). Global Reinsurance Highlights, available at: [https://www.spglobal.com/\\_assets/documents/ratings/research/global-reinsurance-highlights-2019.pdf](https://www.spglobal.com/_assets/documents/ratings/research/global-reinsurance-highlights-2019.pdf)
- Bender J., Gharib T., (2020). Global Reinsurance Highlights, available at: [https://www.spglobal.com/\\_assets/documents/ratings/research/global-reinsurance-highlights-2020.pdf](https://www.spglobal.com/_assets/documents/ratings/research/global-reinsurance-highlights-2020.pdf)
- Business Wire – A Berkshire Hathaway Company, Global Reinsurance Market Report 2021, <https://www.businesswire.com/news/home/20210126005537/en/Global-Reinsurance-Market-Report-2021-A-400-Billion-Industry---COVID-19-Impact-and-Recovery-to-2030---ResearchAndMarkets.com>, accessed on: 2<sup>nd</sup> of June 2021
- Ciumaş C., (2009). Reasigurarea și tehnicile alternative de transfer al riscului. Cluj-Napoca, Casa Cărții de Știință
- Corporate Finance Institute, <https://corporatefinanceinstitute.com/resources/knowledge/finance/reinsurance-companies/>, accessed on 2<sup>nd</sup> of June 2021
- Reinsurance News & Artemis (2020), COVID-19 Market Survey, available at: <https://www.artemis.bm/coronavirus-survey-update/index.html>, accessed on: 2<sup>nd</sup> of June 2021
- Sahin, S, et al., (2020). COVID-19 in a social reinsurance framework: Forewarned is forearmed
- S&P Global Ratings, <https://www.spglobal.com/ratings/en>, accessed on: 30<sup>th</sup> of March 2021
- S&P Global Ratings, How COVID-19 Has Changed Insurance, available at: <https://www.spglobal.com/en/research-insights/featured/how-covid-19-has-changed-insurance>, accessed on: 2<sup>nd</sup> of June 2021