

Predicting the Financial Health of GIC Re: A Study on the Indian Reinsurance Sector

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Abstract

Reinsurance is one of the most important tools in the hands of insurers, to transfer the risk that is beyond their financial boundaries. General Insurance Re (GIC Re) has a very prominent status in the Indian reinsurance sector. The present study aims to determine and analyse the prediction of bankruptcy of GIC Re by using the modified Altman Z^{''}-score (1968) model, in the backdrop of the COVID-19 pandemic and the rising competition in the domestic reinsurance market. The approach of the paper has been a descriptive one, with the use of the purposive sampling technique. The study reveals that GIC Re has been facing financial difficulties during the period of study from 2017 to 2021, and there remains the significant possibility of GIC Re going into financial distress. The state-owned reinsurer needs significant improvement in its financials to arrest financial distress and avert permanent bankruptcy in the near future. The implications arising from the study can be considered in terms of managerial policy decisions.

Keywords: Reinsurance, GIC Re, Modified Altman Z^{''}-Score, Financial Distress, Bankruptcy

Introduction

The need for reinsurance arises in the same way as for direct insurance. Reinsurance is the transfer of insurance business from one insurer to another. Insurance companies transfer the risk that they cannot handle to the reinsurance companies (Bawa & Verma, 2017). Gradually, it has evolved from a risk management tool to a value-added component of the insurance process (Mukherjee et al., 2020). Hence, both insurance and reinsurance are

instruments of risk transfer and risk management. Basically, reinsurers are believed to manage the risks better, as they follow updated risk monitoring and risk-modelling techniques (Bawa & Verma, 2017). Natural catastrophes such as earthquakes, floods, tsunamis, hurricanes, and so on, bring in sudden and significant financial losses and affect the insurance industry severely. In fact, such financial losses are so substantial that they might cripple an insurance company and compel it into bankruptcy. Reinsurance, as such, spread the risk of catastrophic loss, which might bankrupt the ceding insurer (Mukherjee et al., 2020).

The reinsurance sector in India was opened up for private participation since 2016. Till such time, the General Insurance Corporation Re (GIC Re) continued to remain the sole national reinsurer, providing insurance to the direct general insurance companies in India. General insurance companies in India are obliged to cede 5 per cent of their businesses to GIC Re (Bawa & Verma, 2017). GIC Re is controlled by the Government of India, which holds an 85.78 per cent equity stake. It is not only the premier financial institution in India, but also an imperative reinsurance company in the international platform (Mukherjee et al., 2020). The Corporation is presently ranked 13th among the global reinsurance companies and holds the distinction of being the market leader in the Indian reinsurance sector. During 2021, GIC Re celebrated 50 years of its service to the industry and the nation since its inception in 1972.

With the view to making India a reinsurance hub, the Insurance Law (Amendment) Act, 2015, has allowed foreign reinsurers and the Society of Lloyd's to open their branches in India to transact reinsurance business in India. As on March 31, 2021, in addition to GIC Re, there are ten Foreign Reinsurance Branches (FRBs),

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including Lloyd’s, operating in India, as shown in Table 1, within the ambit of the IRDAI (Insurance Regulatory and Development Authority of India) regulations.

Table 1

Reinsurance Companies in India as on March 31, 2021	
Public Sector	Private Sector
1 General Insurance Corporation of India (GIC Re)	Foreign Reinsurer’s Branches
	1. Allianz Global Corporate & Specialty SE, India Branch
	2. AXA France Vie - India Reinsurance Branch
	3. General Reinsurance AG - India Branch
	4. Hannover Rück SE – India Branch
	5. Münchener Rückversicherungs-Gesellschaft Aktiengesellschaft - India Branch
	6. RGA Life Reinsurance Company of Canada, India Branch
	7. SCOR SE - India Branch
	8. Swiss Reinsurance Company Ltd, India Branch
	9. XL Insurance Company SE, India Reinsurance Branch
	Lloyd’s
	10. Lloyd’s India Reinsurance Branch
	Markel Services India Private Limited

Source: IRDAI Annual Reports.

Business competition in the globalisation era requires every company to improve their performance to reach the optimised goal (Hantono, 2019). The rise in the number of new entrants promoted a healthy competition among the country’s reinsurance sector, while at the same time raising concerns about their operational efficiencies and financial health.

Thus, in the backdrop of rising competition and insurance sector reforms, the unparalleled standing of GIC Re in the Indian reinsurance sector induces us to evaluate the financial health of the corporation in the recent time period. In addition, the implementation of GST (Goods & Services Tax) and demonetisation in India, further fuelled with the outbreak of the COVID-19 pandemic, has been an area of concern for the reinsurers, as the market is exposed across all spectrums’ businesses. In the backdrop of the above developments, the present study makes an attempt to investigate the bankruptcy prediction potential of GIC Re pertaining to the study period from 2017-18 to 2021-22. Bankruptcy prediction is a method of finding out the possibility of a company becoming bankrupt or not in the near future (Saragih et al., 2018). Hence, the prediction of bankruptcy is very beneficial for stakeholders, as it provides useful information to stakeholders in making sound financial decisions.

The present study has been structured as follows: Section 2 summarises the literature review. Section 3 portrays the research objectives and methodologies used, along with the limitations and future scope of the study. Section 4 reported the findings and analysis of the results. Section 5 highlighted the concluding observations. A bibliography of the references and materials used has been provided at the end for future referencing.

Literature Review

Having reviewed the past research studies, the researcher did not find enough evidence of studies in India or abroad that comprehensively dealt with the financial distress analysis of GIC Re and/or the Indian reinsurance sector, in the backdrop of the COVID-19 pandemic and insurance sector reforms. The pandemic had a significant impact on the Indian and world economies, the ripples of which were also felt in the Indian reinsurance industry. There is a scarcity of studies relating to reinsurance, particularly in India. The present study intended to fill that research gap with an emphasis on the recent financial performances of GIC Re.

Different researchers attempted to discuss the significance and growth of the reinsurance business in India. For instance, Nema and Jain (2012) discussed the growth of the reinsurance sector in India during the years 2005 to 2010, relating to different classes of reinsurance. They portrayed the financial performances of GIC Re during the pre-nationalisation, post-nationalisation, and post-deregulation phases of the general insurance business in India. They found that the miscellaneous, fire, and engineering reinsurance businesses posted the maximum growth in premium during the study period in comparison to other segments of reinsurance. They have further observed that the business of the sole domestic reinsurer in India recorded a continuous growth pattern in terms of net premium and profitability during their period of study. Bawa and Verma (2017) evaluated the performance of the sole national reinsurer GIC Re for a period of ten years, from 2006-07 to 2015-16. They have employed the ratio-based CAMELS framework in selecting a set of ten ratios that were used to assess the performance of GIC Re. They found that though the company has been making handsome profits, its unsatisfactory combined

ratio showed that the company has been suffering from underwriting losses during their period of study. They have further recommended a more active role of the regulatory authority for better supervision, control, and growth of the Indian reinsurance industry.

Few researchers tried to evaluate the financial performance of reinsurance companies. The most relevant work in this area has been by Mukherjee et al. (2020). The financial performance of GIC Re was assessed for the period 2002-03 to 2017-18 using five standard set of ratios, followed by a financial distress analysis using the modified Altman's Z-score and Ohlson's O-score models. Their study has found that the overall financial performance of GIC Re was somewhat satisfactory in nature, although the company lacked the potential of growing internally. They further predicted the significant possibility of GIC Re going into financial distress in the near future. Barring this, no other studies could be found that has utilised the financial distress models in predicting the financial health of the insurance/reinsurance companies in India or abroad. Most of the studies covered the financial distress conditions of different sectors ranging from banks, consumer goods, telecommunication to property, real estate, and building construction companies. Yendrawati and Adiwafi (2020) used the application of Z-score, Springate, and Zmijewski models in predicting the financial distress of 45 property companies registered on the Indonesian Stock Exchange for the period 2014 to 2018. Their findings have revealed the Z-score model as having the highest accuracy level of 88.44 per cent, followed by the Zmijewski model (83.56 per cent), and the Springate model (48.44 per cent) in the prediction of financial distress in property, real estate, and building construction companies, respectively. Saragih et al. (2018) used the Grover model in analysing the bankruptcy prediction of four telecommunication companies listed on the Indonesian Stock Exchange. The study has found that out of the four sampled telecommunication companies, the only company that did not experience financial distress was PT Telekomunikasi Indonesia Tbk, based on the G-scores covering the period 2012 to 2017.

There were very few studies that tried to estimate the efficiency and productivity parameters of the reinsurance sector. Biener et al. (2015) studied the efficiency and productivity of Swiss insurance companies in the life, property/casualty, and reinsurance sectors from 1997 to 2013 using frontier efficiency methodologies. Using

data envelopment analysis, the researchers estimated the efficiency levels across the different sectors. TFP changes through a two-stage bootstrap-based Malmquist index of Total Factor Productivity (TFP) approach. The study has found that productivity and efficiency in the Swiss insurance market have improved for the property/casualty and reinsurer sectors, but not in the case of life insurance. The results clearly suggested that the entire Swiss life insurance market demonstrated technological regress amid low interest rates and increased competition from other financial service providers such as banks. The other studies in India, by Bawa and Bhagat (2015), Janjua and Akmal (2015), Chakraborty (2016, 2018), Sinha (2015), and so on, mostly concentrated on measuring the efficiency and productivity estimates of the country's life and general insurance sectors.

From the above discussion, it can be observed that there is lack of research in the reinsurance sector in India and abroad. Thus, there prevails a wide gamut of opportunities to conduct research studies on the financial performance of GIC Re amid rising competition in the Indian reinsurance sector.

Research Methodology

Objectives

The present study has two objectives:

- To examine the bankruptcy prediction potential of GIC Re, amid the declining world economic growth and rising competition in the Indian reinsurance sector.
- To assess the impact of COVID-19 on the financial health of GIC Re.

Data and Sample

The present study is descriptive in nature. The objective of the present study is confined to the pre-pandemic and pandemic period, 2017-18 to 2021-22, pertaining to the country's reinsurance sector. The purposive sampling method has been employed in the selection of GIC Re, since it is the sole nationalised reinsurance company, with around 74 per cent market share in India's reinsurance industry. The reason behind the selection of the time

period from 2017-18 to 2021-22 was to judge the extent of the impact of COVID-19, along with the increased competition, on the financial health of GIC Re. The secondary data for the present study has been collected from the IRDAI Annual Reports from 2017-18 to 2021-22, and in addition, from the website of GIC Re. The data-sources were based on the financial statements and necessary schedules of the listed public sector reinsurance companies for the period under review. Like most of the studies in financial services, data availability for this study is also restricted to the information submitted by the reinsurers in compliance with the regulatory authority, IRDAI.

Method

There are a plethora of models through which one can predict corporate financial distress. Financial distress can be predicted by the models developed by experts, such as Z-score, Springate, Zmijewski, Foster, Grover, Ohlson, and others (Yendrawati & Adiwafi, 2020). However, Widiyawati et al. (2015) concluded that the Z-score model was the best in predicting the bankruptcy potential of a company. Hence, the present study has employed the application of the modified Altman Z-score model in the financial distress analysis of GIC Re for the period under review, in tandem with the review of past literature.

Modified Altman's (1968) Z-Score

The Altman Z-score model is a classification model for corporate borrowers, which can also be used to get a default probability prediction (Chakraborty & Saha, 2020). In response to requests for a measure to predict the likelihood of bankruptcy for non-manufacturing firms, Altman (1968) refined his earlier prediction model and presented an alternate multivariate model, named the "modified Z-score model" (Mukherjee et al., 2020).

The modified Altman Z''-score is a ratio-based financial model that incorporates several financial ratios to assess the financial strength of a firm. The modified Altman Z-score model primarily consists of four performance ratios that are combined into a single Z-score, with the fifth variable, i.e. sales/total assets ratio, being dropped to filter the function from possible distortion related to the sector and the country (Chieng, 2013). These four accounting ratios have been weighted by the estimated coefficients in the Z function, using the following equation:

$$Z''\text{-score} = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

Where,

X_1 = Ratio of Net Working Capital to Total Assets of the Firm

X_2 = Ratio of Retained Earnings to Total Assets of the Firm

X_3 = Ratio of Earnings before Interest and Taxes (EBIT) to Total Assets of the Firm

X_4 = Ratio of Market Value (or Book Value) of Equity to Total Liabilities of the Firm

The composite Z''-score of a particular firm is compared against certain critical values or benchmark, as proposed by Edward Altman in 1968, to predict the financial health of a non-manufacturing firm. A low value of Z''-score below 1.1 indicates a 'distress zone' and poor financial soundness of a firm, leading to higher chances of bankruptcy in the near future. On the flip side, a higher Z''-score of above 2.6 denotes a 'safe zone', thereby indicating the sound financial performance of a firm. A Z''-score between 1.1 and 2.6 indicates a 'grey zone', with average financial soundness and less chance of bankruptcy.

Table 2 denotes the various Z''-scores and their discrimination zones which can be used to predict the likelihood of bankruptcy for non-manufacturing firms.

Table 2: Modified Altman Z''-Score (1968) Guidelines for Non-Manufacturing Firms

Z''-Score	Zones of Discrimination
$Z'' < 1.1$	Distress Zone
$1.1 \leq Z'' \leq 2.6$	Grey Zone
$Z'' > 2.6$	Safe Zone

Source: Compiled by the author from different sources.

Limitations and Future Scope

The data collected for the present study has been derived from the published financial statements of GIC Re, without any emphasis on primary data. Hence, the study incorporates all the limitations that are inherent in the published financial statements. The study is restricted to a time span of five years, focussing on the pre-Covid-19 and Covid-19 transition period from 2017-18 to 2021-22. Yet another limitation of the study is that it has solely

analysed the financial performance of the domestic reinsurer GIC Re. An increase in samples might have an impact on the results.

In spite of these limitations, the present study provides a direction as to the financial distress analysis of GIC Re. It also provides ample opportunities to prospective researchers and academicians to analyse similar applications covering more number of players in the Indian reinsurance industry, either using the same construct or different relevant constructs. Empirical studies involving more number of players covering the

country's reinsurance sector for an extended time period can be further considered as a probable area of future research. Insights from this study can be further replicated in other emerging and developing economies of the world as an extension.

Results and Discussion

Table 3 presents the modified Altman Z'' -scores and a descriptive statistics of the varied financial performance indicators included in the model.

Table 3: Altman Z'' -Scores and Financial Ratios: Analysis of GIC Re

Years	Variables				Z'' -Score	Status
	X_1	X_2	X_3	X_4		
2017-2018	-0.384	0.421	0.044	0.0084	-0.84	Distress Zone
2018-2019	-0.488	0.418	0.045	0.0163	-1.52	Distress Zone
2019-2020	-0.873	0.571	-0.022	0.0238	-3.98	Distress Zone
2020-2021	-0.785	0.452	0.026	0.0171	-3.48	Distress Zone
2021-2022	-0.775	0.413	-0.0125	0.0154	-3.81	Distress Zone
No. of Obs.	5	5	5	5	5	
Minimum	-0.873	0.413	-0.022	0.0084	-3.98	
Maximum	-0.384	0.571	0.045	0.0238	-0.84	
Mean	-0.661	0.455	0.0161	0.0162	-2.726	
SD	0.212	0.067	0.032	0.005	1.443	

Source: Calculated by the author.

The variable X_1 denotes the short-term solvency position of a company; it expresses the net working capital as a percentage of its total assets. A high net working capital to total assets ratio denotes a company's ability to service its short-term obligations on time, whereas a low ratio indicates serious liquidity crisis. It has been found that the variable X_1 ranges from a minimum of -0.873 to a maximum of -0.384, with a mean value of -0.661. This indicates a comparatively low net working capital to total assets position for GIC Re. The variable X_2 denotes the retained earnings to total assets ratio, indicating a company's ability to finance its investment out of its internal funds, instead of borrowed funds. The higher the ratio, the higher will be the chances that the company would finance its assets more out of internal funds. The results have revealed that the variable X_2 ranges from a minimum of 0.413 to a maximum of 0.571, with a mean value of 0.455. This shows that retained earnings, on an average, represents just 45.5 per cent of the total assets of GIC Re, thereby indicating less utilisation of internal

funds and more usage of borrowed funds in funding its total assets. The variable X_3 denotes the EBIT to total assets ratio; it indicates the efficiency of a company in the utilisation of its total assets to generate operating profits. The study has found that the variable X_3 ranges from a minimum of -0.022 to a maximum of 0.045, with a mean value of 0.0161. Thus, GIC Re experienced a sharp decline in its operating profit to total assets ratio from 4.4 per cent in 2017-18 to a negative 1.25 per cent across the study period. Lastly, the variable X_4 denotes the market value (book value) to total liabilities ratio, which ranged from a minimum of 0.0084 to a maximum of 0.0238, with a mean value of 0.0162 and a standard deviation of 0.005. The variable X_4 indicated a fluctuating trend across the study period, with a drastic decline during COVID, post-2020.

With the Altman model, the lower the Z'' -score, the more likely it is that the firm will go into financial distress (Mukherjee et al., 2020). The Z'' -score of GIC Re ranges

from a minimum of -3.98 to a maximum of -0.84 , with a mean value of -2.726 . The negative Z'' -score indicates that there remains a significant possibility of GIC Re going into financial distress in the near future; it might even go bankrupt without any significant improvement in its financial health. The Altman Z'' -scores of GIC Re thus give an indication to the policy-makers, government, and to the top management of the Indian reinsurance behemoth to adopt effective strategies for better control and management of its resources, to avert any financial bankruptcy in the long run.

Summary and Conclusion

The findings of the study have contributed towards a better understanding of the financial health of the country's sole public-sector reinsurer, GIC Re, in the backdrop of the COVID-19 pandemic, insurance sector reforms, and increasing competition in the domestic reinsurance market. The findings of the study bring to light that the financial performance of GIC Re is not in an upright control and needs a significant improvement to arrest financial distress and avert permanent bankruptcy in the near future. The Altman Z'' -scores of GIC Re continued to remain in the distress zone across the study period, with no significant improvement in its financial ratios. It is now a moot-point as to whether GIC Re would be able to retain its market share in the long run amid financial difficulties and rising competition from the foreign reinsurers in the Indian reinsurance market. The findings of the study would serve the management team of GIC Re in devising plans, policies, and strategies to address and minimise the occurrence of financial distress. The findings further provide an indication to the prospective investors to invest judiciously and take informed decisions, before going ahead with any investment-related matters in GIC Re.

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