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Unravelling the Dynamics: The Effects of Leverage on the Financial Stability of Insurance Firms in Kenya

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Abstract

Despite the crucial part that the insurance industry plays, firms operating in this sector have been having trouble maintaining their financial stability. The insurance industry has faced considerable volatility in profitability, resulting in some firms being placed under receivership or even going out of firm. The purpose of this study was to analyse the effect of leverage on financial stability of insurance firms in Kenya. The study was informed by Pecking Order Theory. The research was conducted using an explanatory research design, and the positivist philosophical approach was utilized. The target population for this study consisted of the 46 insurance firms that held IRA licenses and were operating during the time period under consideration (2014-2021). The census method was utilized for the research thesis, which focused on all 46 insurance firms in Kenya. The study used secondary data obtained from audited financial statements, which were publicly available on the websites of individual insurance firms. To gather panel data for the study, a secondary data collection template was employed. In order to draw conclusions from the data that was gathered, this study employed both descriptive and inferential statistical methods. The study employed a generalized method of moments modelling guided by static panel regression. The data processing was done using the Stata software. The research findings were presented through the use of tables, figures, and graphs. The findings of this study showed that leverage significantly and negatively impacted the financial stability of Kenyan insurance firms ($\beta = -3.513831$, $p = 0.000 < .05$). The study concludes that if leverage challenges are not adequately managed, they can have a detrimental influence on the profitability and capital of a particular insurance sector, and in the worst case scenarios, they can even force insurance sectors that are otherwise financially secure to fail.

The study recommends that the general insurers in Kenya should enhance their leverage in order to strengthen the financial stability of their firms. However, insurance firms should be careful not to leverage themselves too much, since this can also be damaging to their long-term sustainability.

Keywords: *Unravelling Dynamics, Financial Leverage, Financial Stability, Insurance Firms, Insurance Industry Stability, Kenya*

1.0 Introduction

Insurance firms provide policyholders with protection against various risks, encompassing financial loss, health and casualty incidents, as well as damage or loss of property (Varenik, Pestovskaya & Opaliichuk, 2016). In exchange for providing insurance protection, insurance firms charge policyholders a premium. Providing payment is put toward covering both the costs of the coverage and the risk that is expected to occur. A portion of the premiums is placed in an account that seeks to achieve greater returns in order to provide longer-term risk coverage. As a consequence of this, insurance firms are required to maintain sufficient equity or buffer capital in order to fulfil their commitments in difficult situations in the event that losses on the diversified portfolio exceed the projected loss (Hartwig, Niehaus &Qiu, 2020).

The insurance sector in Kenya and other nations have had their fair share of problems in recent years, and that the public's perception of them has taken a hit as a result (Mumo, 2017; Herciu & Erban, 2016). This is despite the fact that the industry makes crucial contributions. Over the course of the previous decade, a great number of insurance firms were forced to discontinue their firm and ultimately went out of firm as a result. According to Wahome (2018), the majority of these firms went bankrupt while holding tens of cash worth billions of shillings that belongs to investors in life funds, pension plans, and other types of insurance policies. This raises the question of whether or not insurance firms are financially stable and whether or not they provide investors with sufficient information to enable educated judgements. Additionally, this raises the question of whether or not insurance firms provide adequate information to investors.

According to Murigu (2014), factors both internal and external to an insurance firm have the potential to have an effect on the firm's overall financial health. Internal factors, on the other hand, put more of an emphasis on an insurer's distinguishing characteristics as opposed to external variables, which can be either industry-specific or related to general economic indicators. These aspects are discussed in more detail in the following paragraphs. Sufficient liquidity refers to the ability to repay debts due within the next year using cash or assets that can be readily converted to cash. Prior to increasing income from underwriting and investment operations or liquidating capital assets, Zawawi *et al.* (2019) stress the importance of an insurer's ability to meet its short-term obligations to policyholders.
The amount to which an insurance firm capitalizes on its assets to produce revenue is one of the factors that determines its financial efficiency. The accomplishment of an organization's goals while consuming the fewest possible resources is the definition of efficiency. An output distance function is used to quantify revenue efficiency, which is one of the many facets of financial efficiency (Popovic & Martia, 2005). Revenue efficiency refers to how efficiently a firm uses its resources to increase earnings, and it is characterized by how well the firm uses its resources (Alhassan, Addisson & Asamoah, 2015).

It is of the utmost importance that the net written premium be maintained in a state of equilibrium and be maintained at a level that is lower than the policyholders' excess, which is a representation of the assets that an insurance firm possesses (Louberge, 2013). The maximum allowable leverage ratio is established according to the type of insurance firm that performs

underwriting (Mahfoudh, 2014). Furthermore, the level of financial leverage is a crucial firm characteristic that affects financial stability. Highly leveraged firms face a greater risk of insolvency, as they are more vulnerable to fluctuations in cash flows and interest rates (Jensen &Meckling, 1976). In the context of insurance firms, firms with lower financial leverage exhibited greater financial stability, as they were better able to absorb financial shocks and maintain sufficient solvency levels (Grace *et al.*, 2015).

Insurance firms play a significant role in the economy in general and are, as a result, essential contributors to the nation's financial system (Liedtke, 2011). These activities enable other market participants to disperse unsystematic risk, which is one of the reasons why insurance firms are so important. As a consequence of this, they serve as the foundation for a variety of different firm procedures. Insurance firms play a crucial role in providing long-term risk capital to the real economy, as they hold a substantial portion of the world's financial assets, accounting for more than 12 percent. This considerable contribution highlights the importance of insurers in supporting economic growth and stability, making their role in the global financial system even more significant. Their emphasis on long-term investment strategies allows them to serve as stabilizing forces in financial markets (Pfeifer & Langen, 2021). However, the near-collapse of insurance firms like AIG during the global financial crisis prompted a re-evaluation of the sector's contribution to systemic risk (Valckx et al., 2016). The close call with the insurer AIG, among others, served as the catalyst for this re-examination.

Because the insurance sector in China exhibited volatility as well, the Chinese regulator was forced to streamline the policy framework in order to improve the country's overall financial stability (Yan & Faure, 2021). Valckx *et al.* (2016) placed particular emphasis on the ever-changing nature of insurance operations as well as the impacts those operations have on systemic risk. The development of new product lines and chances for investment can put insurers in a position where they face a higher overall risk. The closer relationships that insurers have with banks have become yet another key risk factor as a result of the growing participation that insurers have had in the capital markets

According to Boloupremo and Ogege (2021), the insurance industry in Nigeria has likewise faced difficulties in maintaining its financial stability (Hartwig, Niehaus & Qiu, 2020).Following a thorough risk analysis of the world's most significant systemically important insurers, the Insurance Analysis and Information Services Institute (IAIS) has given macro-prudential recommendations. This extensive study emphasizes the critical role that insurance operations play in assessments of financial stability. By examining the potential risks and offering recommendations, IAIS contributes to a deeper understanding of the insurance industry's influence on the broader financial system, helping regulators and policymakers make informed decisions to maintain and enhance overall economic stability. Despite this, insurance firms all over the world continue to have the same difficulties maintaining financial stability as the majority of the other actors in the financial system.

According to Agung, Atiti and Kimani's research from 2019, the insurance subsector's assets saw a growth of 18.2 percent in 2019, but a decrease of 1.8 percent. A decrease in profitability was also observed in the subsector, which was attributed to the fact that firms in the private sector are currently experiencing difficulties. According to the findings of the Financial Sector Stability Report 2020, in general. In terms of gross premium revenue, the insurance industry performed better in quarter one of 2019 (Agung *et al.*, 2019). However, as a direct result of increased expenditures, the insurance firms had a loss of KSh 1.1 billion during the first three months of 2020. In addition to this, the volatility of the NSE led to a significant drop in the amount of money made through investments (NSE financial report, 2020).

During the period between 2018 and 2020, the financial stability of insurance firms faced significant challenges, particularly due to low interest rates and market volatility. One notable study by the International Monetary Fund (IMF) (2018) highlighted that low interest rates negatively impacted the profitability of life insurance firms, thereby posing risks to their financial stability. The IMF further noted that non-life insurance firms experienced challenges due to increased catastrophic events, which resulted in higher claims payouts and reduced underwriting profits (IMF, 2018).The financial stability of insurance firms between 2018 and 2020 was influenced by several factors, including low interest rates, market volatility, and catastrophic events. Research during this period emphasized the importance of capital adequacy, underwriting performance, investment performance, risk management practices, and operational efficiency in maintaining the financial stability of insurance firms (IMF, 2018; Kozak & Świtała, 2019; NAIC, 2020). Despite these challenges, the insurance industry demonstrated resilience, attributed to strict solvency regulation and effective diversification strategies.

1.1 Statement of the Problem

The purpose of the insurance sector is to address the concerns of investors by distributing the risk that is associated with incurring monetary losses and guaranteeing that firms are able to continue operating (Bushman, 2014). Because of the impact it has on the success of both individual investment activities and the performance of other sectors, the sector is essential for the economic stability of a nation. The insurance industry plays a crucial role in the economy by providing financial protection against risks and uncertainties. However, in recent years, many insurance firms have been facing challenges in maintaining their financial stability (Kiragu, 2014). Kenyan insurance firms have been facing issues with regard to their stability in recent times and this has been attributed to a number of factors including high expense ratios (Muduli & Raval, 2018).

Many Kenyan insurance firms have high operating costs due to inefficiencies in their processes, such as overstaffing and outdated systems. This leads to high expense ratios, which negatively impact profitability and financial stability. Concerns about the firm's operations and finances led to the placement of Resolution Insurance under statutory administration (Mbuthia, 2021). Unpaid claims totalled KSh 1.2 billion when Standard Assurance declared bankruptcy in 2009. As a direct result of the failure of Concord Insurance KNAC, a number of other insurance companies, including Access, Lakestar, Stallion, United insurance (2005) Standard assurance (2009) Blueshield insurance (2011) Concord insurance (2013) Resolution insurance (2022), have also been forced to declare bankruptcy (Okoth, 2022). While some insurance companies have not yet collapsed, they are indeed grappling with serious financial distress.

According to a report by Cytonn (2021), there was a slight increase of 1.6% in Net Premium in the insurance industry during 2020. Despite this growth, the leverage escalated to 88.1% during the same timeframe. Meanwhile, the industry recorded negative performances in terms of return on equity (ROE) and return on assets (ROA), posting -9.4% and -1.3% respectively. In addition, the available statistics demonstrates fluctuations in the financial stability of insurance firms in Kenya between 2014 and 2021(Figure 4.6). The scores highlight periods of stability, improvement, and decline, emphasizing the need for a comprehensive assessment of the financial health of these firms and how it is affected by leverage.

Inadequacies in terms of methodology, context, and conceptual understanding that have been found in previously published research on the financial health of insurance firms are another factor that prompted the current investigation. While this study primarily centers on financial stability, a study by Murigu (2014) adopted a different approach, investigating the factors influencing the total financial stability of general insurance firms in Kenya. Too *et al.* (2019)

however, concentrated their study on the attributes of companies and the financial performance of general insurance firms within Kenya. This contrasts with the results of a study by Mwangi (2013) into the elements affecting the financial health of Kenyan insurance firms. These results reveal a hole in our knowledge of the connection between corporate features and insurance firms' financial health.

When examining the factors affecting the financial health of Asian insurance firms, Chen and Wong (2004) used logistic regressions as opposed to the static panel data model that was used in this study. Similar to this, Murigu (2014) used multiple linear regression as opposed to a fixed model for panel data analysis. Considering the examples provided in the literature, this study was inspired by the ongoing challenges faced by Kenyan insurance firms regarding financial stability, such as decreasing insurance penetration and diminishing profitability, despite their essential role in risk distribution and uncertainty removal. Moreover, the existing literature for this research presents conceptual, contextual, and methodological shortcomings that underscore the need for this investigation. Hence, the extent to which leverage influences the financial stability of insurance companies in Kenya continues to be a matter of empirical investigation: This helped to motivate this study.

1.2 Research Objective

To analyse the effect of leverage on financial stability of insurance firms in Kenya.

1.3 Research Hypothesis

H_0: Leverage does not significantly affect financial stability of insurance firms in Kenya.

2.1 Theoretical Framework

Pecking Order Theory

The pecking order hypothesis relies on the information gap that exists between managers and investors as its primary source of support. When compared to outside investors, managers have a deeper understanding of the opportunities and threats faced by the firm, as well as its fundamental value. According to the notion, organizations have a preference for certain types of finance when it comes to their day-to-day operations (Myres *et al.*, 1984). When the return on investment is not sufficient, the use of debt may be necessary. Firms should only resort to additional equity capital in the most dire of circumstances. Therefore, the initial source of financing that was utilized was money generated internally through profits. Following that was the utilization of short-term securities, which was followed by debt, then preferred stock, and finally common stock.

According to the pecking order concept, the distribution of equity in the form of common stock may be the very last source of funding that is accessible. This is because the pecking order principle prioritizes debt financing over equity financing. According to Martinez, Scherger, and Guercio (2018), the theory provides an alternate explanation for organization leverage, which is one of the main components for insurers. This is stated to be the case by stating that the theory offers an alternate explanation for organization leverage. To put it another way, the theory provides an alternative explanation for the leverage that organizations possess.

Martinez, Scherger and Guercio (2018) state that when deciding how to finance capital, firms typically prioritize using retained earnings, then debt, and only after those options have been exhausted do they turn to issuing new shares. This preference for financing capital through retained earnings comes from the authors' findings that firms have this predisposition. This is because firms have a predisposition to prefer to finance capital through retained earnings. This is the most fundamental principle of the pecking order theory, which claims that decisions about leverage are influenced by the asymmetry of information that exists between

management and investors. According to Calabrese (2011), it is expected that increasing earnings may result in reduced leverage. This is due to the fact that a more productive firm is able to cover capital requirements with internal financial resources consisting of retained earnings.

According to the theory, firms would rather finance their investments via internal financing first, then debt financing, and ultimately equity financing (Hale, 1984). This is because internal financing allows firms to keep more of their earnings. This preferred order of financing is determined by the cost of capital as well as the information disparity that exists between firms and investors. According to the Pecking Order Theory, corporations prefer to use internal financing because it is the least costly and requires no disclosure of information to outsiders (Martinez, Scherger & Guercio, 2018). Debt financing is the second preferred option because it has a lower cost of capital than equity financing, but it does require some disclosure of information to investors. Equity financing is the least preferred option because it has the highest cost of capital and requires the most disclosure of information to investors (Myers, 1984).

For insurance firms, internal financing is typically the most stable and preferred source of capital (Hodder & Tschoegl, 1985). Internal financing includes retained earnings, which are profits that are not distributed as dividends but are instead reinvested back into the firm. By using retained earnings to finance investments, insurers can avoid the costs and risks associated with external financing, such as the need to disclose sensitive financial information to investors (Stearns, 1986). Debt financing is the next preferred source of capital for insurance firms, as it is typically less costly than equity financing. However, excessive reliance on debt financing can increase the risk of financial distress and insolvency, particularly in the event of an economic downturn or a sharp rise in interest rates (Heimer, 1985).In practice, insurance firms may often use a combination of internal financing, debt financing, and equity financing to meet their capital needs (Mohamad & Murugesu, 2020). The Pecking Order Theory provides a useful framework for understanding the financing preferences of insurers and how those preferences may impact their financial stability.

The pecking order theory, in general, provides an explanation for why insurance firms have logically chosen to let cash flows dictate their level of borrowing. This suggests that insurance firms, who are already under pressure from a lack of internal money, may resort to debt financing in order to meet their financial obligations. According to Zurigat (2009), debt contracts are safer than equity contracts because they limit the ways in which holders might lose money. As a result, holders of debt contracts are less likely to face miss-evaluation or adverse selection difficulties than holders of equity contracts. This strategy provides management of insurance firms with a basis for selecting the appropriate financing sources, which may include debt and equity. As a consequence of this, it lends support to the variable for firm leverage that was investigated in the study.

2.2 Empirical Review

Batool and Sahi (2019) analysed the influence that the global economic crisis had on the financial health of insurance firms in the US and UK from 2007 to 2016. Their research covered the period from 2007 to 2016. Researchers collected data from 24 different insurance firms on a quarterly basis between 2007 and 2016 using various panel data techniques. The explanatory variables were derived from a mixture of firm-specific and macroeconomic indicators like the Consumer Price Index and Gross Domestic Product. ROI and ROE were used as indicators of financial health. The results show that debt financing is harmful to a firm's bottom line when it is relied on to keep operations going. This analysis concentrated on leverage adequacy as opposed to the emphasis on other firm-, industry-, and macroeconomic-specific components placed by Batool and Sahi (2019). In their 2019 research, Batool and Sahi looked at additional

firm-, industry-, and macroeconomic-level characteristics. The researchers were interested in the relationship between ROA (return on assets) and financial performance rather than financial stability. Nor were the mediating functions of the external operating environment or revenue efficiency investigated, nor was there an analysis of the correlation between appropriate capital and financial performance.

Abubakar (2015) looked into how financial leverage affected the bottom lines of Nigerian banks. A random selection of 6 deposit money institutions was chosen after a thorough examination of the total population of 23. Between the years 2005 and 2013, secondary data were extracted from the annual reports and financial statements of deposit money institutions. Consideration was given to a number of financial metrics, including the ratio of debt to equity, the debt proportion, and the return on equity (ROE), the latter serving as an indicator of financial leverage. High levels of leverage are maintained by banks, as evidenced by the fact that debt constituted 84% of total assets in the descriptive study. The study found no statistically significant connection between the debt ratio and ROE. In this research, Altman z-score was utilized to measure financial stability instead of return on equity (ROE). The debt to equity ratio was also used to evaluate leverage.

Murigu (2014) in a research study sought to determine what factors affect Kenya's general insurance industry, therefore he surveyed 23 firms and used panel data covering four fiscal years (2009–2012). Leverage has a large and beneficial effect on the return on investment (ROI) of general insurers. It was decided to use Return on Assets (ROA) as the dependent variable instead of Financial Stability. Taqi, Khan and Anwar's (2020) research sought to understand how borrowing money affected the oil and gas industry in India from 2008 to 2017. Financial leverage was calculated using the debt-to-equity ratio and the debt-to-total-assets ratio, while profits were analysed using ROA, ROE, and the margin ratio. Data was analysed with E-views and SPSS, and descriptive statistics, correlation analysis, and regression analysis were applied. The study found that leverage was positively associated with the oil and gas firms in India that were studied. Financial leverage and profits at listed Nigerian pharmaceutical corporations were also investigated by Anifowose, Soyebo and Tanimojo (2020) throughout the period 2003-2018. The debt-equity ratio was found to significantly increase the profitability of the studied pharmaceutical firms. Financial managers, according to the authors, should make the most of leverage to increase the firm's worth for all its constituents.

A study by Ahamed and Mallick (2017) explored the correlation between elevated corporate debt levels and stable financial markets in the United States and the United Kingdom. For this investigation, secondary data was gleaned from the annual reports and financial records of deposit money institutions spanning from 2005 to 2013. The return on equity (ROE) ratio, examined as a surrogate for financial leverage, was assessed in conjunction with the debt to equity ratio, and the debt ratio. According to the findings, larger levels of leverage in non-financial enterprises were associated with increased financial instability, particularly during times of financial crises. This was notably the case when financial crises occurred. The authors stated that the use of leverage by corporations could magnify shocks and contribute to systemic risk inside the financial system.

A research study conducted by Aspris, Foley and Svec (2018) explored the relationship between leverage and the financial cycle using data collected from non-financial companies located in 30 different countries. The researchers came to the conclusion that leverage was procyclical, which means that it grew during times of economic growth and decreased during times of economic decline. They also discovered that greater leverage levels linked to a higher probability of financial instability, which highlights the significance of monitoring corporate

leverage across the various stages of the financial cycle. In addition, they found that higher leverage levels led to a higher probability of financial instability.

Acharya, Engle, and Pierret (2017) analyzed the impact of regulatory risk weights on the relationship between leverage and financial stability. The study focused on the role of macro prudential stress tests in the European banking system. The authors found that regulatory risk weights could distort the relationship between leverage and financial stability, leading to unintended consequences. They suggested that improving the design of macro-prudential stress tests could help mitigate these issues and better capture the link between leverage and financial stability.

Dang, Kim and Shin (2020) used data from non-financial companies in the United States to investigate the connection between the distress premium and corporate leverage. The authors observed that investors expected better profits for holding the debt of riskier companies, which translated to larger distress premiums for firms with higher leverage levels. The research showed that when evaluating the effect of leverage on financial stability, the distress premium should be taken into account. Furthermore, Gornall and Strebulaev (2018) looked into the connection between bank and borrower capital structure within a supply chain framework. The authors discovered that highly leveraged banks lent to more leveraged enterprises, indicating that financial instability could permeate the supply chain. The study showed that while evaluating the connection between leverage and financial stability, it is crucial to take into account the interconnection of banks and borrowers.

Kithandi (2020) studied five energy and petroleum companies trading on the Nairobi Stock Exchange to see how financial leverage affected the firms' bottom lines. These companies were hand-picked from the energy and petroleum industry. Secondary data from the annual reports of the selected energy and petroleum companies was used extensively in the analysis. Measures of leverage, including as the debt ratio, the debt-to-equity ratio, and the interest coverage ratio, were the focus of extensive research and analysis. However, the return on assets (ROA) ratio was used to evaluate success. Descriptive and regression analyses were used to dissect the correlation between leverage and performance and the impact of leverage on the latter. According to the results of the study, using leverage significantly and negatively affected the financial performance of the companies studied.

Onyinyechi (2019) discovered that leverage has a favourable impact on corporate profitability. Examining Nigeria's debt financing and corporate finance performance provides proof of this. The study found that leverage may improve performance and advised management to optimize capital structure in order to boost return using multiple regression analysis and a correlation matrix. Okoye (2019) in contrast discovered a weak negative correlation between the debt-to-equity ratio and financial performance evaluated in terms of return on equity, as well as a weak negative association between the profitability of Nigerian commercial banks between 2005 and 2017. These findings were published in Okoye's book, which was published in 2019. In addition, Okoye (2019) discovered a modest negative link between the profitability of Nigerian deposit money banks between 2005 and 2017. This association was established between the years 2005 and 2017. Both correlation analysis and ordinary least squares regression analysis were utilized in order to study the relationship between the dependent variable, which was portrayed as ROE, and the independent variables, which were portrayed as Debt ratio, Debt-Equity ratio, and Firm size, respectively. According to the conclusions of the research, it is imperative that Nigerian commercial banks keep an adequate ratio of debt to equity.

The capital structure and profitability of the Nigerian consumer products industry were analysed by Usman (2019). Six firms were used as samples in the study, which was conducted between 2012 and 2016. Several methods, including correlation and regression analysis, were

used to describe and interpret the data. Debt-to-equity ratio, ROE, ROA, and ROA on short-term debt are among the metrics appraised. Long-term debt and short-term debt were shown to have no effect on performance, suggesting that firms should weigh the benefits and drawbacks of different funding options when deciding on a financing plan.

The research of Gadzo and Asiamah (2018) investigated the effect of leverage on the financial standing of unquoted banks in Ghana. The research showed that leverage is positively associated with performance. We used descriptive statistics and regression analysis to examine the data from the chosen unquoted financial institutions. Ajayi and Araoye looked at the sustainability and profitability of Nigerian manufacturing firms in a separate study that year. Using variables including Asset Turnover, Return on Equity, Debt Equity Ratio, Age of Firm, and Return on Assets, this study looked at ten manufacturing firms in Niger from 2008 to 2014. According to the data, a high debt-to-equity ratio reduces a firm's potential to make a profit. Therefore, the report cautioned, managers should be careful about using debt finance for their endeavours.

Ibhagui and Olokoyo (2018) evaluated 101 Nigerian pharmaceutical companies registered on stock exchanges to determine the relationship between financial leverage, firm size, and performance. A threshold model was used for the research, which looked at the years 2003 through 2007. The results showed that regardless of the level of debt in Nigeria's publicly traded enterprises, leverage had a positive effect on the performance of larger organizations. Financial leverage's effect on the performance of 482 non-financial firms listed on the Karachi Stock Exchange (KSE) between 2004 and 2009 was studied in a separate study by Raza (2013). Using panel data and regression analysis, Raza discovered that the leverage ratios for the textile industry were significantly high, leading to a decrease in performance due to their substantial debt levels. The author also reported that the above result constitutes to high cost of borrowing which has resulted in the low profitability of the textile industries.

Similarly, Chadha and Sharma (2015) studied 422 publicly traded manufacturing companies in India over the course of ten years to investigate the effect that leverage has on the financial performance of companies. The return on assets, the return on equity, and Tobin's Q are the three proxies that are utilized in this study for the purpose of calculating the overall financial performance. According to the findings of the study, leverage does not have a significant impact on two of the performance ratios, namely return on asset and Tobin's Q respectively. On the other hand, leverage has a significant correlation with return on equity, along with other variables such as firm age, firm size, sale growth, and asset turnover. These variables are a good predictor of the financial performance of Indian manufacturing sectors.

According to the findings of a study conducted by Shubita and Alsawalhah (2012), the use of financial leverage has an impact on the profitability of industrial companies that were listed on the Amman Stock Exchange over a period of six years (2004-2009). 39 different companies took part in the research, and correlation analysis as well as multiple regression analysis were utilized in order to interpret the findings. The author discovered a negative and statistically significant link between the amount of debt a firm has and its profitability by using the size of the firm and its rate of sales growth as control variables. In addition, we strongly recommend that management pay more attention to the financial decisions they make in order to avoid excessive borrowing. Banafa *et al.* (2015) examined the impact of financial leverage on the bottom lines of 42 non-financial enterprises listed in Kenya between 2009 and 2013. Using a causal study methodology and a panel data model, the study shows that leverage has a large and negative impact on an organization's financial performance. The author emphasized numerous times throughout the book that long-term debt was the primary source of funding for the vast bulk of the organization's assets and resources.

Alghusin (2015) investigated the effects of financial leverage, growth, and size on the profitability of publicly traded Jordanian manufacturing companies. Twenty-five different Jordanian manufacturing firms were included in the sample; all of them were listed on the Amman Stock Exchange (ASE) between 1995 and 2005. Findings indicated a strong correlation between financial leverage, expansion, and the bottom line of manufacturing firms. Therefore, industrial companies can improve their profitability by reducing debt and increasing financial assets as a percentage of total assets. Researchers stressed that their findings applied only to factories that were identical to those they studied. In addition, the sample size was small. Therefore, it was recommended that future research should investigate generalization of the findings beyond the Jordanian industrial firms and service sector.

Raheman and Nasr (2017) conducted research on the connection between effective working capital management and increased profitability for 94 Pakistani companies that are listed on the Karachi Stock Exchange. According to the data, a strong negative association was shown to exist between the liquidity of firms and their profitability. According to Raheman and Nasr (2017), leverage refers to the practice of obtaining funds from third parties such as banks, the stock market, the money market, and other financial organizations. The study concluded that, if a firm is leveraged, it can be said that firm takes loans to purchase assets. The study used ninety-four firms listed in KSE and took the results on WCM and profitability. The study concluded that there was the indirect correlation among profitability and WCM. In addition, the study founded that leverage and liquidity had indirect correlation with WCM but size of the firm had direct relationship with profitability.

2.3 Conceptual Framework

Figure 1:Conceptual Framework

Source : Author(2023)

3.0 Research Methodology

Positivist philosophy is an epistemological perspective that emphasizes the importance of empirical observation, quantifiable data, and objective analysis in the pursuit of knowledge (Crotty, 1998). This philosophy underlies many scientific disciplines, including panel regression analysis. Positivism assumes that objective, unbiased truths about the world can be discovered through systematic observation and analysis of phenomena (Bryman, 2012). In panel regression analysis, the positivist approach involves using quantitative data collected over time on the same subjects to identify patterns, relationships, or causal effects between variables (Hsiao, 2003). This research was grounded in the positivist worldview as its primary theoretical framework. This study used an explanatory research approach to determine the relationship between leverage and the financial stability of insurance firms in Kenya. Because they have already materialized, the independent factors cannot be altered. An explanatory design allows a study to determine how explanatory factors affect the outcome variable in the absence of intervention (Ginsburg, 2011). According to Saunders *et al.* (2007), explanations establish causal relationships between dependent and independent variables.

Empirical Model

This research adopted the static panel data model developed by Arellano and Bover (1995) to analyze the relationship between firm-specific attributes and the financial stability of insurance

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companies. The static panel model was chosen for the study because this estimation approach first differentiates the data to prevent persistent effects. The static panel model is particularly useful when the dependent variable is affected by unobserved individual-specific characteristics that are constant over time, and when the explanatory variables are time-invariant (Pesaran & Zhou, 2018). It can also control for endogeneity, as the individual-specific fixed effects eliminate the potential correlation between the dependent variable and the explanatory variables. The equation presented below displays the static panel model used.

$$\mathbf{Z_{it} = \beta_0 + \beta LEV_{it} + \varepsilon_{it}}$$

Where:

Z_{it} = Altman z-score of insurance firm *i* at time *t;*

β_0= Constant Term;

LEV_{it} = Levarage of insurance firm *i* at time *t;*

$\beta_1 =$ Coefficent of predictor variable
$\mu_i =$ Unobserved time invariant
$\varepsilon_{it} =$ Disturbance term
Subscript $i =$ Insurance firm(Cross $-$ section dimension)raging from $1 - 46$
Subscript $t =$ Years(time $-$ series dimension)raging from $2014 - 2021.$
The following emerging market model is generated using the four ratios for the revised Altman model in emerging markets, as recommended by Manaseer and Al-Oshaibat (2018).

$$Z'' = 3.25 + 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4 + \cdots \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.4)$$

Where:

Z'' = Financial Stability as measured by Altman z-score
X_1 = working capital divided by total assets
X_2 = Retained earning divided by total assets
X_3 = EBIT divided by total assets
X_4 = Book Value of Equity/ total debt

Z-score used in this study is a composite variable that determines whether or not an insurance firm is in financial distress or not. It's a binary criterion used to group things that can't happen together. The following are the zones of discrimination based on the Altman Z-score:

Z > 2.99, "Safe" zone,
1.23<Z < 2. 99 "Grey" zone,
Z < 1.23 "Distress" zone

Accordingly, If the firm's z score is greater than 2.9, then it is regarded to be in a safe zone; if it is between 1.23 and 2.9, then it is considered to be in a grey zone; and if it is less than 1.23, then it is considered to be in a distress zone (Altman, 2000). A total of 56 insurance companies were active in Kenya's market as of 2020. For the years 2014–2020, however, only 46 of these have reached full functioning (IRA, 2020). Participating insurance companies were required to have been in operations for a period of between 2014 and 2021 (IRA, 2021). As a result, the study did not include any regulated insurance firms that did not belong to this group. As a result, the 46 insurance firms that were both licensed by IRA and in firm during the study's investigation period (2014–2021) made up the population of interest for this study. Since licensed insurance firms are required to submit their annual financial statements to the Insurance Research Authority (IRA), making the pertinent data more accessible, the research focused on these firms. The research took a census-like approach by concentrating on all 46 insurance firms that were both registered with the IRA and in firm during the time period under

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investigation (2014-2021). According to Hair (2007), a census may be utilized in situations in which the population is relatively small or in circumstances in which it is reasonable to include the complete study population.

This research used secondary panel data for the years 2014 through 2021 from public, audited financial statements of the firms and annual reports of IRA by using a secondary data collecting sheet. Secondary data analysis not only reduces the amount of time that would have been spent independently gathering information, but it also produces databases that are larger and of a higher quality than would be possible for a single investigator to acquire on their own. This is especially important to keep in mind while working with quantitative data. In order to collect the data, we relied on the income statement, the notes to the accounts, and the statements of financial condition included in the financial statements. Annual reports of the IRA, public disclosures, CBK and KNBS publications all provided additional sources of secondary data. As a result, the sample data began in the year 2014 and continued until the year 2021

In the realm of descriptive statistics, some examples of helpful statistics include the mean, the standard deviation, the highest and lowest values, and trend analysis. (Murtagh & Heck, 2012) carried out an investigation by utilizing inferential statistics, such as Pearson correlation and Panel regression analysis, in order to discover the nature of the connection that exists between the characteristics of the firm and its degree of financial security. This was done in order to determine the nature of the connection that exists between the qualities of the firm and its level of financial security. The data were initially seen on an Excel work sheet prior to being imported into the STATA tool for further analysis. Viewing the data served as a prerequisite. The information was gleaned from the respective financial statements of the several insurance companies.

Using Pearson's correlation coefficient was the method that Emerson (2015) suggested for determining the degree of correlation existing between the various independent factors and the dependent variables. The direction and magnitude of the linear link can be determined by looking at the correlation coefficient, which has a negative value. A negative correlation suggests that a rise in one variable produces a drop in the other variable, whilst a positive correlation says that the converse is true. When one variable increases and the other variable does so as well, this indicates a direct relationship between the two (Gujarati, 2021).

The static panel model that Arellano and Bover (1995) created was used in this study to evaluate the relationship between leverage and the financial stability of insurance companies. This study was conducted in the United Kingdom. Because using it requires varying the data in order to exclude fixed influences, using a static panel model was the method of choice. In contrast to this, Probit, Tobit, and logistic models all necessitate that the criterion on the left-hand side be either binary or multinomial. The fact that static panel data is single is one of the advantages of adopting it (Roodman, 2009).

Regression analysis using panel data estimate methods was utilized to evaluate the impact of leverage on the financial stability of insurance firms in Kenya between 2014 and 2021 (Pindado & Requejo, 2015). This approach is more insightful as it can distinguish between the theoretical effects of different factors and actions compared to time series and cross-sectional data (Hsiao, 2007). The analysis aimed to understand how firm variables affected the financial stability of insurance firms in Kenya, taking into account the time series and cross-sectional aspects. The results were presented in tables and trend line graphs.

4.0 Findings and Discussion

4.1 Descriptive Statistics

The analysis of data and the methods utilized to examine such data have a significant influence on the outcomes of a study. In describing the characteristics of the data used in a study, measures of central tendency such as mean, maximum, minimum, and standard deviation are frequently used. The descriptive statistics results are presented in table 1.

Table 1: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Financial Stability	368	3.8995650	1.247763	1.2620	7.012400
Leverage	368	0.6468327	0.1834311	0.2859	0.971230

Descriptive results in Table 1 show that financial stability measured using Altman's Z-Score had a mean value of 3.8995650 with a standard deviation of 1.247763 indicating slight degree of variations evidenced by a maximum Altman's Z-Score value of 7.012400 and a minimum of 1.2620. This implies that there was slight fluctuation in financial stability among insurance firms in Kenya in the study period of between the year 2014 and 2021 as depicted by the standard deviation of 1.247763. The results also indicate that, on average, the insurance firms in Kenya fall into the "safe" zone. This implies that they generally have a low risk of bankruptcy and display solid financial stability. However, it is important to consider the individual Z-Scores for each firm in the sample, as the mean value may not accurately represent the risk profile for all firms. Additionally, it is crucial to remember that Altman's Z-Score is just one of many tools that can be used to assess the financial health of a firm, and other factors should be considered when conducting a comprehensive analysis.

Regarding leverage, the results show that the mean leverage value for the firms for the period between 2014 and 2021 was 0.6468327 with a standard deviation of 0.1834311depicting slight variability in leverage among the firms for the study period as affirmed by a maximum leverage value of 0.971230 and a minimum of 0.2859. A mean leverage value of 0.6468327 for insurance firms in Kenya suggests that, on average, these firms finance roughly 64.68% of their assets with debt and the remaining 35.32% with equity. This indicates that the insurance firms in Kenya are moderately leveraged. It is essential to interpret this leverage value in the context of industry norms and specific characteristics of insurance firms in Kenya. This implies that the insurance firms in Kenya for the period under study were having higher market-to-book ratios and higher cash balances, were more profitable, and pay more taxes and dividends.

4.2 Trend Analysis

The research conducted an analysis of the trends present in all the variables of the study: leverage and financial stability. The results derived from this analysis were presented and discussed in the sections below.

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Trend line Analysis on Leverage

Figure 2 shows trend analysis on leverage.

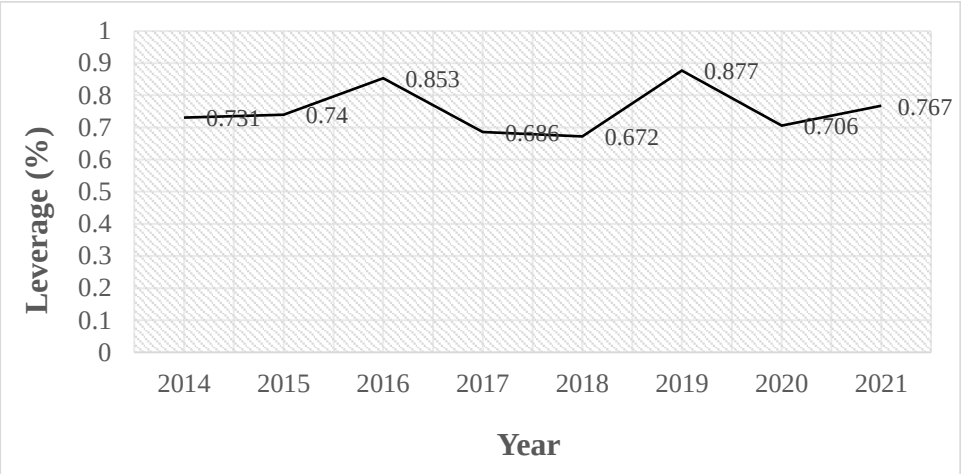

Figure 2: Trend Line on Leverage

The trend line shows that in the year 2014, the average leverage for the insurance firms in Kenya was at 0.731. This signifies a substantial level of borrowed capital compared to the company's equity capital. In 2015, there was a minor uptick in leverage to 0.74, demonstrating a slight increase in borrowed funds. A significant increase in leverage is evident in 2016, with a peak at 0.853. This is the highest point in the entire period, implying that the insurance firms in Kenya were relying heavily on borrowed capital during this year. However, a decline started to set in from 2017 when the leverage dropped to 0.686. This decrease continued into 2018, taking the leverage even further down to 0.672. This was the lowest point in the period from 2014 to 2021, indicating a period of less reliance on debt in these years.

The following year, 2019, saw a dramatic spike in leverage to 0.877, which is the highest level in the eight-year period. This suggests that insurance firms were heavily reliant on borrowed funds during this year. This trend, however, did not persist into the next years. In 2020, there was a decline to 0.706, followed by a modest increase in 2021 to 0.767. In general, the leverage trends among insurance firms in Kenya from 2014 to 2021 are characterized by significant fluctuations. These changes reflect the varying levels of reliance on borrowed funds by these firms across the years. The highest leverage is observed in 2019, while the lowest is seen in 2018.

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Trend line Analysis on Financial Stability

Figure 3 shows trend analysis on financial stability.

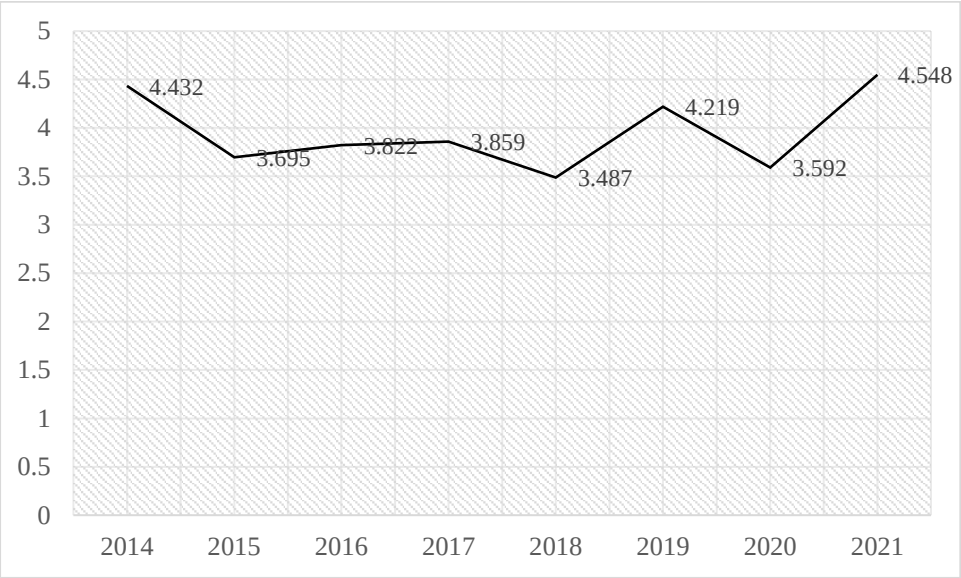

Figure 3: Trend line on Financial Stability

Figure 3 provides data representing the trend analysis results of the financial stability of insurance firms in Kenya between the years 2014 and 2021, measured using the Altman Z-score. The Altman Z-score is a formula that assesses the financial health and stability of a company, specifically predicting the likelihood of bankruptcy. In 2014, the insurance firms exhibited a relatively stable financial position with a score of 4.432. However, the following year, there was a decline in financial stability, as indicated by the score dropping to 3.695. This decline might have raised concerns about potential financial stress among the insurance firms. The year 2016 showed a slight improvement in financial stability, with the score increasing to 3.822. While this signaled a modest recovery, it was still lower than the initial score in 2014. In 2017, the score continued to increase marginally to 3.859, suggesting a further but minimal improvement in the financial stability of the insurance firms.

However, 2018 brought a significant decrease in financial stability, with the score dropping to 3.487. This decline raised concerns about the financial health of the insurance firms, indicating a potentially challenging period. The subsequent year, 2019, saw a recovery in financial stability as the score increased to 4.219. Although this indicated an improvement compared to the previous year, it still fell short of the scores observed in 2014 and 2017. In 2020, there was another decline in financial stability, as evidenced by the score decreasing to 3.592. This drop suggested an increase in financial stress for the insurance firms, posing potential challenges.

However, the year 2021 brought positive news, as the financial stability score experienced a substantial increase to 4.548. This surge indicated a significant improvement in the financial health of the insurance firms and marked the highest score observed throughout the study period (2014-2021). Overall, the trend analysis demonstrates fluctuations in the financial stability of insurance firms in Kenya between 2014 and 2021.

4.3 Inferential Statistics: Correlation and Panel Regression

Correlation Analysis

The statistical method known as correlation analysis is employed to investigate the nature, magnitude, and direction of the association between two or more variables. The use of correlation analysis in the context of determining the extent to which leverage and financial

stability are associated in insurance firms in Kenya can provide significant insights into the ways in which these elements are related to one another. Correlation matrix was used to assess the level of association between leverage and financial stability of insurance firms in Kenya at 5 percent significance level on STATA. The correlation coefficient is indicated with an asterisk (*) while the respective P-values were compared to the 0.05 significance level. Table 2 shows the correlation matrix.

Table 2: Correlation Matrix

	Financial Stability	**Leverage**
Financial Stability	1.0000	
Leverage	-0.8982*	1.000

Table 2 shows that leverage had a significant and strong negative correlation with financial stability among insurance firms in Kenya (r=-0.8982*). This indicates that as the level of leverage employed by insurance companies' increases, their overall financial health decreases. This aligns with the findings from a study by Murigu (2014), which explored the factors influencing the financial performance of general insurance companies in Kenya. The research studied firm-specific variables such as age, equity capital, leverage, liquidity, ownership, retention ratio, size, and underwriting risk against ROA, a measure of financial performance. According to the study, leverage significantly and positively impacted the ROA of general insurers.

Panel Regression Analysis Results

The objective of the study was to examine whether there is a statistically significant relationship between leverage and the financial stability of insurance firms in Kenya. To accomplish this, a panel regression analysis was conducted. The panel regression results revealed that leverage had a significant negative relationship with financial stability (β=-3.513831, t-value = -19.64>1.96, p-value = 0.000<.05), leverage had negative and significant effect on insurance firm's financial stability. This implies that a unit increase in debt ratio among the insurance firms leads to a decline in financial stability by 3.513831 units. This is consistent with the study by Omondi and Muturi's (2013) finding that leverage determines the proportion of total assets that are paid for by debt. They argue that one can evaluate a firm's commercial and financial risks by using leverage ratios. Leverage refers to the amount of debt that is used to pay for additional capital investments that could improve a firm's financial outcomes. This group believes that one can analyse a firm's commercial and financial risks by using leverage ratios. In addition, Abubakar (2015) discovered that debt was used to finance 84% of all assets, which exemplifies the substantial degree of leverage that is maintained by financial institutions. The findings lend credence to the trade-off theory, which posits that an excessive amount of debt may make a firm unstable.

Hypothesis Testing

H_0: Leverage does not considerably affect financial stability of insurance firms in Kenya

Panel regression results showed that the coefficient for leverage was -3.513831 and the p-value was less than 0.05, as such the null hypothesis that leverage does not significantly affect the financial stability of insurance firms in Kenya was rejected at the 5% significance level. The results of this study corroborate those of Rabbani Mahboob, Subhan, and Iqra (2015), who found that the degree to which a firm uses financial leverage affects its performance and profitability but has no influence on the organisation's size or expansion. In other words, the firm's performance and profitability suffer when financial leverage is increased, but they

improve when it is decreased. The results corroborate the claims made by Batool and Sahi (2019) that increased firm debt negatively impacts financial performance. Insurance in Kenya is governed by the Insurance Regulatory Authority (IRA), hence this is relevant there. The correlation between insurance companies' use of leverage and their bottom lines could be altered by rules and regulations implemented by the IRA. For instance, insurance companies' ability to use leverage could be constrained by capital adequacy regulations.

5.0 Conclusions

Leverage emerged as critical determinant of financial stability. The appropriate use of leverage enables insurance firms to optimize their capital structure, which can translate into improved financial performance and stability. However, excessive leverage can expose firms to higher risks and potential solvency issues, highlighting the importance of maintaining a balanced approach to capital management. The hypothesis test results indicated that leverage significantly affect financial stability of insurance firms in Kenya at 5 percent significance level implying that an increase in leverage impacts financial stability of insurance firms in Kenya negative and significantly.

If issues with leverage are not adequately managed, they can have a detrimental influence on the profitability and capital of a particular insurance sector, and in the worst case scenarios, they can even force insurance sectors that are otherwise financially secure to fail. In addition, insurance companies that are having challenges with their liquidity may find it difficult to meet the expectations of their clients, which puts them at a disadvantage when competing with other firms in their industry. Despite this, it is possible to reduce the risk connected with liquidity by keeping enough cash reserves and bringing the liquidity shortfall under control.

6.0 Recommendations

Insurance firms in Kenya should take measures of reasonable financial leverage in order to boost their firm's profitability. In order to improve financial performance, the primary focus should be placed on decreasing the proportion of equity capital that is held in the form of debt. Aside from that, in order for insurance firms to improve their overall financial performance, they need to have adequate methods for the management of their debt in place. It is necessary for insurance firms in Kenya to engage in effective management of their liquidity in order to optimize both the worth of the firm and its financial success. Insurance firms should closely monitor the external operating environment, including regulatory changes and market conditions, and adjust their leverage accordingly to mitigate potential risks and maintain financial stability.

Insurance firms in Kenya must have a comprehensive risk management framework in place that is able to evaluate and control the use of leverage. This system would identify and measure the potential risks related to leverage, then set appropriate limits and controls to manage them. The system should also be capable of stress testing and scenario analysis to understand the possible impacts of various business conditions on the company's solvency. Regular internal audits should be done to ensure the effectiveness of these controls. Also, it is crucial to ensure that the top management and board members understand the implications of leverage on the financial stability of the firm. They should be educated about the risks involved, and trained on how to balance the use of leverage to optimise capital structure while maintaining financial stability. Clear policies should be implemented to ensure decisions on leverage are taken with a comprehensive understanding of their potential impact on the company's financial health.

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