

# “Do underwriting profit factors affect general insurance firms’ profitability in South Africa?”

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# DO UNDERWRITING PROFIT FACTORS AFFECT GENERAL INSURANCE FIRMS' PROFITABILITY IN SOUTH AFRICA?

## Abstract

This research paper examines the correlation between underwriting profit factors and the overall profitability of publicly traded general insurance companies operating in South Africa. The study analyzed a sample of 36 insurers, considering their quantifiable markets and accessible financial data from 2008 to 2019. Employing signal correlation analysis, the investigation explored the associations between various financial indicators and Return on Assets (ROA). The results revealed negative correlations between ROA and the logarithms of total investment (TI), shareholder funds (SF), and underwriting profits (UWP), with correlation coefficients of  $-0.4500$ ,  $-0.3365$ , and  $-0.4050$ , respectively. These findings indicate that as TI, SF, and UWP increase, there is a tendency for ROA to decrease for general insurance companies in South Africa. Furthermore, a positive relationship was observed between the earning-asset ratio and ROA. This suggests that as the earning-asset ratio rises, the ROA of general insurance firms in South Africa tends to improve, indicating a potentially favorable impact on profitability. The significant findings of this study emphasize the importance of prioritizing effective risk management practices within insurance firms. By implementing these measures, such as minimizing the likelihood of claims and ensuring accurate reflection of assumed risks in premium charges, insurance companies can maintain positive underwriting profit. This, in turn, has the potential to enhance their overall profitability.

## Keywords

underwriting profit, general insurance firms, profitability, South Africa

## JEL Classification

G22, G32, L25

## INTRODUCTION

South Africans heavily rely on general insurance companies for unexpected life events (Alhassan & Biekpe, 2015). The firms face challenges like fierce market competition, regulatory limitations, and economic changes, impacting their success (Asongu & Odhiambo, 2020). General insurance profitability is tied to factors such as underwriting profit, calculated as premium revenues minus claim payments (Cummins & Outreville, 1992; Asare et al., 2017; Ngunguni et al., 2020). In South Africa, over 90 registered insurers compete in the market, with general insurance contributing ZAR175 billion in written premiums (Wolff, 2022). Despite covering diverse products, these insurers face increased competition, multiple claims, and new regulations (Wolff, 2022). Insurance plays a crucial role in African economic growth (Nzuza & Msomi, 2023). Assessing profitability in general insurance heavily relies on the "underwriting profit" metric, which compares premium income to claim costs (Ngunguni et al., 2020; Alamsyah, 2021). Underwriting profit is a key driver of routine operational profits for insurers (Purnamawati, 2019). International research confirms its importance in evaluating insurers' success (Pyykkönen, 2021; Rajapathirana & Hui, 2018).



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However, empirical evidence on the influence of underwriting profit on general insurance profitability in South Africa is scarce. By investigating the relationship between underwriting profit and overall profitability, it seeks to provide a comprehensive picture of the financial performance of general insurance firms in South Africa.

## 1. LITERATURE REVIEW

In general, there is a favorable correlation between underwriting profit and the profitability of general insurance firms (Dutta, 2020; Alamsyah, 2021; Lalon & Das, 2022). Profit from underwriting is calculated by subtracting the amount of money spent on claims and other expenditures from the total amount of money earned from insurance premiums (Mwangangi, 2020). Profits from underwriting that are higher than expected suggest that the firm is successfully controlling the risks it faces and bringing in more money than it is shelling out to cover claims and other expenditures (Amani & Markonah, 2020). Studies that were conducted in the real world provide evidence that there is a favorable connection between underwriting profit and profitability. For instance, Oscar Akotey et al. (2013) discovered that underwriting profit has a positive correlation with competitiveness, which is an essential indication of a company's profitability. In addition, Burca and Batrinca (2014) discovered that the profitability of underwriting has a positive correlation with the solvency of general insurance firms, which is yet another critical component of profitability. However, various factors such as premium revenue, investment income, operational expenditures, and claims expenses (Shawar & Siddiqui, 2019; Furqan et al., 2023; Hissiyah & Meylianingrum, 2023) also influence the relationship between underwriting profit and profitability. These variables serve as examples of the broader impact on the link between underwriting profit and profitability. The effects of underwriting profit on profitability can be moderated or mediated by these elements. For instance, excessive operational expenditures or claims expenses might counterbalance the positive impact of underwriting profit on profitability.

A study by Soye et al. (2022) examined the relationship between underwriting profit and profitability of general insurance companies in Nigeria. The study used data from general insurance companies in Nigeria over a ten-year period from 2007

to 2018. The results of the study showed a positive and significant relationship between underwriting profit and profitability. This indicates that an increase in underwriting profit leads to an improvement in the profitability of general insurance companies. Similarly, another study conducted by Yang and Feng (2013) investigated the relationship between underwriting profit and profitability of property and casualty insurance companies in China. The study showed a positive and significant relationship between underwriting profit and profitability. The study found that an increase in underwriting profit leads to an improvement in the profitability of property and casualty insurance companies. In addition, a study conducted by Siopi and Poufinas (2023) examined the relationship between underwriting profit and profitability of European insurers. The study used data from 148 European insurers over a ten-year period from 2005 to 2014. The results of the study also showed a positive and significant relationship between underwriting profit and profitability. The study found that an increase in underwriting profit leads to improved profitability of European insurers.

The effect of underwriting profit on the profitability of general insurance companies can be explained through several theoretical frameworks. Among these, two commonly used theories are Agency Theory and Resource-Based View (RBV) Theory. *Agency theory* emphasizes the principal-agent relationship between shareholders and managers in a firm (Zardkoohi et al., 2017). The theory suggests that managers may prioritize their interests over the interests of shareholders (Panda & Leepsa, 2017). In the context of the general insurance industry, this may lead to a focus on short-term profits at the expense of long-term sustainability. Thus, underwriting profit may be a useful measure for shareholders to monitor management's decisions and ensure they are acting in the best interests of the firm and its stakeholders. On the other hand, *Resource-Based View (RBV) theory* suggests that a firm's internal resources and ca-

pabilities are the primary determinants of its sustained competitive advantage and superior performance (Madhani, 2010). In the context of the general insurance industry, underwriting profit can be considered as an internal resource that can affect the profitability of the insurance company (Zainudin et al., 2018). Insurers that possess the necessary resources and capabilities to generate positive underwriting profit are better positioned to achieve superior profitability compared to their competitors. Both theories provide a useful lens through which to examine the relationship between underwriting profit and profitability in general insurance companies. Agency theory emphasizes the importance of aligning management incentives with shareholder interests, while RBV theory highlights the value of developing internal resources and capabilities to achieve sustainable competitive advantage.

This study aims to fill this knowledge gap, examining factors affecting the correlation between underwriting profit and return on assets (ROA) for South African insurers. The study aims to provide insights for policymakers, regulators, and industry practitioners.

## 2. METHODOLOGY

The data were gathered from reputable databases such as Refinitiv Eikon and S&P CapitalIQ, which are widely recognized as reliable secondary sources. These databases offer a wealth of easily accessible and trustworthy information. The target population for this study consisted of 36 insurance companies that are presently listed in South Africa, as officially reported by the South African Reserve Bank (SARB) in 2023. The primary objective of this study was to conduct a meticulous analysis of all 36 publicly traded insurers in South Africa, covering the period from 2008 to 2019, utilizing a longitudinal panel research design. This approach was chosen due to its ability to account for behavioral variations over time, effectively address heterogeneity concerns, and provide highly accurate parameter estimates, as highlighted by the work of Magweva and Sibanda (2023). The selection of these specific insurance companies was based on the availability of reliable and relevant data for the specified time frame. By employing this rigorous

criterion, this study ensured that the dataset used for the analysis was robust and comprehensive, allowing for a comprehensive exploration of the research objectives.

The panel data technique may get over issues coming from unobserved heterogeneity or dearth of time series data, in addition to using information from the data time series and cross section to offer deeper insights data to complete the regression analysis that will minimize bias (Dorofti & Jakubik, 2015; Olarewaju & Msomi, 2021). Here, the following models were used to examine the connections between ROA and firm underwriting profit.

$$\begin{aligned} \text{Financial Performance} &= \\ &= f(\text{Underwriting profit}). \end{aligned} \quad (1)$$

Recall, the concept of the model (panel regression) is given as:

$$Y_{it} = a_i + \beta X_{it} + \varepsilon_{it}, \quad (2)$$

where,  $Y_{it}$  is the dependent variable;  $a_i$  is the constant term;  $i$  is the number of cross-sections that ranges from 1 ...  $N$ ;  $t$  is the time period that ranges from 1 ...  $N$ ;  $\beta$  is the coefficient of independent variables;  $X_{it}$  is the vector of the independent indices;  $\varepsilon_{it}$  is the stochastic error term.

Underwriting profit (UWP), earning asset ratio (EARATIO), shareholder's fund (SF), and total investment (TI) are used for this study while having ROA as a dependent variable.

$$\begin{aligned} ROA_{it} &= \alpha + \beta_1 LOGUWP1_{it} + \\ &+ \beta_2 LOGTI2_{it} + \beta_3 LOGSF3_{it} + \\ &+ \beta_4 EARATIO4_{it} + \varepsilon_{it}. \end{aligned} \quad (3)$$

Underwriting profit, total investment and shareholders' fund are logged to reduce the unit even though total investment, shareholders' fund and earning asset ratio are the control variables.

Studies have been conducted throughout the years to determine what criteria are most crucial to comprehend the ROA of insurance organizations, and accounting metrics have been employed as measuring variables.

**Return on assets (ROA)** is a gauge for profitability that can be applied to gauge an insurance

company's capacity to both turn a profit and fulfil its obligations to policyholders. Return on investment metrics have been used in the past. Burca and Batrinca (2014) state that insurance companies need to turn a profit to compete successfully in both domestic and international markets, and that ROA continues to be an important metric of company performance (Msomi, 2023). A thorough review of the relevant literature informed the selection of both independent and dependent factors as explanatory factors, and the variables shown below are offered as potential contributors to the ROA of insurance firms.

**Profitability (ROA):** Profitability is a crucial indicator of an insurance company's ability to generate returns on its investment assets and cash (Isayas, 2022). It plays a vital role in a company's sustainability, growth, and attractiveness to potential investors. Without sufficient revenues, an insurance company cannot sustain its operations or achieve its goals. The ability to generate profit after accounting for expenses remains a key financial metric for measuring success. Tracking profitability is essential not only for assessing current financial performance but also for predicting prospects. According to Olarewaju et al. (2017), analyzing profitability provides insights into a company's ability to raise capital, manage working capital, control overhead costs, and effectively utilize its assets. It serves as an initial step in evaluating the financial stability and creditworthiness of an insurance company. Previous studies have extensively examined the ROA in the insurance industry, and our research follows this established line of inquiry.

**Underwriting profit (UWP):** Underwriting profit is the financial gain generated by a general insurance company through its underwriting activities (Murat et al., 2002; Murigu, 2014; Wahyono et al., 2021). These activities involve evaluating risks associated with ensuring policyholders and determining appropriate premium rates (Oscar Akotey & Abor, 2013). The calculation of underwriting profit involves subtracting the sum of losses paid out and expenses incurred from the total amount of premiums earned. Underwriting profit serves as a key indicator of an insurance company's underwriting performance and ability to effectively manage risk (Fali et al., 2020). A positive under-

writing profit signifies that the premiums collected are sufficient to cover both the losses incurred and the operating expenses, resulting in a net gain for the company (Kaya, 2015). On the other hand, a negative underwriting profit indicates that the losses and expenses exceed the premiums earned, leading to a net loss (Oscar Akotey et al., 2013). Insurance companies closely monitor their underwriting profit as it directly impacts their overall profitability and financial stability. A consistent and positive underwriting profit is desirable, as it contributes to the company's ability to generate income and support its ongoing operations. Conversely, a sustained underwriting loss can pose significant challenges and may necessitate adjustments in underwriting practices, premium rates, or risk assessment strategies.

**Total investment (TI):** Total investment in the context of insurance companies refers to the aggregate value of all assets that the company has invested in, encompassing both short-term and long-term investments (Palea, 2022). Insurance companies heavily depend on their investment portfolios to generate income and augment their profitability (Eling & Jia, 2019). To optimize returns while mitigating risks, insurance companies employ various investment strategies and make allocation decisions. Research has extensively examined the impact of asset allocation across diverse asset classes, including equities, bonds, real estate, and alternative investments. Studies have delved into the effects of different asset allocation approaches on investment performance and overall profitability (Derbali & Jamel, 2018). Additionally, researchers have explored the contrasting approaches of active and passive investment management within insurance company portfolios. Active management involves selecting specific investments based on market analysis and expert judgment, while passive management entails tracking market indices through investments in index funds or exchange-traded funds (ETFs). Comparative studies have shed light on the benefits and drawbacks of each approach, considering factors such as fees, performance, and risk. Moreover, the use of derivatives in insurance company portfolios has garnered attention. Derivatives are financial instruments whose value is derived from an underlying asset. They enable insurers to hedge against risks and potentially enhance investment returns.

Research has examined the use of derivatives, such as options and futures contracts, within insurance company investment strategies and their impact on profitability.

**Shareholder's fund (SF)** represents the residual claim that owners hold on a company's assets once all liabilities have been settled (Butzbach, 2022). It comprises the capital invested by shareholders through preferred or common shares, additional funds contributed beyond the initial investment, and retained earnings. Retained earnings encompass the cumulative net earnings that have not been distributed to shareholders throughout the company's history (Ali & Faisal, 2020). Mathematically, shareholders' funds are calculated as the difference between total assets and total liabilities. This relationship adheres to the principles of accounting and ensures that the company's financial equation remains balanced. The shareholders' fund provides valuable information about the company's financial health and the owners' equity stake in the organization. It signifies the portion of assets that belongs to shareholders, serving as a measure of their investment value and potential return. Monitoring the shareholders' fund is essential for shareholders, investors, and analysts as it reflects the net worth and financial position of the company. Changes in shareholders' funds over time can indicate trends in profitability, capital injections, dividend policies, and overall financial performance.

**Earning asset ratio (EAR):** The earning asset ratio is a measure that assesses the proportion of assets within a company's portfolio that generate revenue during a specific period. It quantifies the ratio of mean earning assets to total assets and provides insight into the company's potential to generate profits. This ratio, as proposed by D'Arcy and Garven (1990), offers a glimpse into a compa-

ny's ability to generate income from its asset base. By calculating the earning asset ratio, analysts and investors can evaluate the efficiency and profitability of an organization's asset utilization. A higher earning asset ratio suggests that a larger proportion of the company's assets is actively generating revenue, indicating a higher likelihood of achieving profitability. Conversely, a lower ratio may indicate that a significant portion of the assets is not effectively contributing to income generation. The earning asset ratio is valuable in assessing the overall financial performance of a company. It highlights the company's ability to deploy its assets effectively and generate income. Monitoring this ratio over time can provide insights into changes in the company's asset composition, investment strategies, and overall profitability.

Several indicators and past research that investigated their utilization as major variables of ROA in insurance companies are highlighted in Table 1.

To ensure the validity and reliability of the data employed in this study, three distinct statistical tests were conducted: the unit root test, the cross-sectional dependency test, and the Hausman test. Prior to conducting the regression analysis, the time series data was subjected to the Augmented Dickey-Fuller procedure to evaluate its stationarity. This step was crucial to mitigate any concerns related to statistical significance that may arise from utilizing nonstationary time series data. The unit root test provided insights into the stationarity properties of the time series, allowing us to ascertain whether the variables exhibited a stable long-term behavior. By conducting this test, we were able to confirm the presence or absence of unit roots, which are indicative of nonstationary behavior in the data.

In addition, the cross-sectional dependency test was employed to address the issue of potential in-

**Table 1.** Variables' description

		Variables	Measurement	Reference(s)
Independent	Underwriting profit	<b>Profitability (ROA)</b>	<b>Net profit before tax/total assets</b>	<b>Msomi (2023)</b>
		Underwriting profit (UWP)	The difference between the earned premiums and its expenses and claims	Jiang and Nieh (2012)
		Total investment (TI)	Initial investment plus the working capital and other investments	D'Arcy and Garven (1990)
		Shareholder's fund (SF)	Total assets less total liabilities	Ali and Faisal (2020)
		Earning asset ratio (EAR)	Ratio of mean earning assets to total assets	D'Arcy and Garven (1990)

terdependence among the selected insurers. This test allowed us to assess whether there were any correlations or dependencies among the individual companies in the sample. By examining the cross-sectional relationship, we could account for any potential bias that might arise from interdependencies and ensure the robustness of our findings. Furthermore, the Hausman test was utilized to determine the most appropriate model for our data, considering both fixed and random factors. This test allowed us to make an informed decision regarding the selection of either the fixed effects model or the random effects model. By carefully considering the implications of each model and conducting the Hausman test, the suitability and accuracy of the chosen model for the data at hand was ensured. By conducting these rigorous statistical tests, this study aimed to establish the validity and reliability of the data utilized in this study, mitigate biases, and ensure the robustness of the findings.

### 3. RESULTS

The results are presented in a straightforward fashion, starting with descriptive statistics and moving through correlation statistics and panel regression. Several tests can be employed to determine whether a variable in a regression has a unit root. These tests include the Augmented Dickey-Fuller (ADF) test, KPSS test, Phillips-Perron test, ADFGLS assessment, among others. According to Phesa and Sibanda (2022) together with Afriyie et al. (2020), the purpose of testing for a unit root in a model or regression is to verify the stationarity of the stochastic element. Therefore, the ab-

sence of a unit root in the variables of a regression model establishes that the regression is stationary, meaning that the variables have a constant mean and variance over time. Lawrence and Bernard (2023) also found that the presence of a unit root in a regression can result in a very high R-squared value, leading to invalid results. In this study, the ADF test was utilized to determine the presence of a unit root. The null hypothesis for the ADF test posits that each index has a unit root, while the alternative hypothesis states that there is no unit root. The ADF test probability value must be less than 5%, and the t-statistics.

The Hausman test was used to determine whether fixed or random effects was superior in terms of suitability or adequacy. To investigate the relationship between underwriting profit and the overall profitability of general insurance companies, pooled regression fixed effects tests and random effect tests were conducted. Although a certain number of independent variables were found to be substantial in the pooled regression, the study did not consider the results of the pooled regression. The reason for this is that the regression model does not differentiate between the various general insurance businesses that were investigated in the study. In other words, the pooled model does not consider the potential for heterogeneity or individuality across general insurance companies, which is something that both the fixed and random effect models take into consideration.

Table 2 displays the descriptive statistics of the indicators for the impact that underwriting profit has on the overall profitability of general insurance firms in South Africa. The variable

**Table 2.** Descriptive statistics

Panel result	ROA	TI	SF	UWP	E_A_RATIO
Mean	0.046883	2.877007	2.035741	2.563280	0.363645
Median	0.036169	2.578589	1.778117	2.206355	0.354072
Maximum	0.446103	5.445985	4.110653	4.679818	0.967708
Minimum	0.000331	-0.276275	-1.217495	0.819914	0.017876
Std. Dev.	0.053550	1.310117	1.119934	1.097416	0.196288
Skewness	3.669516	0.182481	-0.102278	0.313185	0.333326
Kurtosis	20.58872	2.114596	2.801817	1.752669	2.646197
Jarque-Bera	6507.772	16.43205	1.419593	32.79423	8.544000
Probability	0.000000	0.000270	0.491744	0.000000	0.013954
Sum	20.15975	1237.113	855.0110	1035.565	130.9122
Sum Sq. Dev.	1.230200	736.3382	525.5321	485.3421	13.83192
Observations	430	430	420	404	360

**Table 3.** Correlation result on the impact that underwriting profit has on the overall profitability of general insurance firms in South Africa

Variable	ROA	TI	SF	UWP	E_A_RATIO
ROA	1	-0.4500	-0.3365	-0.4050	0.2557
TI	-0.4500	1	0.6751	0.9458	-0.6561
SF	-0.3365	0.6751	1	0.7605	-0.3601
UWP	-0.4050	0.9458	0.7605	1	-0.5349
E_A_RATIO	0.2557	-0.6561	-0.3601	-0.53495	1

with the lowest mean value is ROA, with a value of 0.046883. It has a standard deviation (SD) of 0.05355 and ranges from a minimum value of 0.000331 to a maximum value of 0.446103. On the other hand, the log of total investment has the highest mean value of all the variables, at 2.8770, with the highest maximum value of 5.4459 and a minimum value of 0.2762. It also has the highest SD value of 1.3101 among all the variables. The log of shareholder's fund has a mean value of 2.03574 and an SD of 1.119, ranging from the lowest value of 1.2174 to the highest value of 4.1106. The log of underwriting profit has a mean of 2.5632 and an SD of 1.0974, with the second highest maximum value of 4.6798 and the highest minimum value of 0.8199. Finally, the earning asset ratio shows a mean of 0.36364 and an SD of 0.1962, ranging from the lowest value of 0.0178 to the highest value of 0.9677.

A signal correlation analysis showed a negative association between ROA and the logarithms of total investment, shareholder funds, and underwriting profits (-0.4500, -0.3365, and -0.4050, respectively) (Table 3). Using this finding, it can

be deduced that when TI, SF, and UWP go up, ROA goes down for general insurance firms in South Africa. There is a positive relationship between the earning-asset ratio and ROA, indicating that as the earning-asset ratio rises, so does the ROA of general insurance firms in SA.

Table 4 reveals the panel result from the random and fixed effect techniques of the impact that underwriting profit has on the overall profitability of general insurance firms in South Africa. The Hausman test probability value is 2.99%, which is more than 5%, hence, the effect (random) result is the best result for the objective two. Also, the Durbin-Watson statistic of (1.6357) is greater than the R-Squared value indicating that the regression is not spurious. This study was to investigate if underwriting profit of general insurance firms in SA contributes to their profitability as taken by ROA, and the findings are herewith presented.

**Total investment (TI):** In this study, the log of TI is negatively and significantly (at 1% level) associated with profitability as measured by ROA (Table 4). It was also observed that a 1% increase in total invest-

**Table 4.** Panel result of the impact that underwriting profit has on the overall profitability of general insurance firms in South Africa

Independent variables	Random effect test significance	T-statistics	Standard coefficient	Fixed effect test significance	T-statistics	Standard coefficient
TI	0.0007**	-3.4274	-0.0198	0.0331*	-2.1401	-0.017923
SF	0.0077**	-2.6786	-0.0088	0.0003**	-3.6601	-0.017074
UWP	0.0492*	1.9734	0.0149	0.9652	-0.0436	-0.000574
E_A_RATIO	0.5695	-0.5693	-0.0086	0.002842**	0.1354	0.002842
Constant	0.0000**	6.9358	0.0785	0.0000**	4.4406	0.123791
F-statistics P value	0.0000	-	-	0.0000	-	-
R-Squared	0.103659	Durbin-Watson stat = 1.6357	-	-	-	-
Adjusted R-squared	0.093560	-	-	-	-	-
Hausman Test (Proba > Chi Sq Statistic) = 10.72	Hausman test probability value = 0.0299	-	-	-	-	-

Note: \* and \*\* represent significance at 5% and 1%, respectively.

ment leads to a  $-0.0198\%$  decrease in ROA of the general insurance firms provided that other indicators impeding ROA are not controlled.

**Shareholder's funds (SF):** The data obtained regarding the impact of SF on UWP revealed a negative and significant (at 1% level) relationship with profitability (Table 4). This observation could imply that that a 1% increase in shareholder's fund leads to a  $-0.0088\%$  decrease in ROA of the SA general insurance firms provided other factors that could contribute to the increase in ROA are well kept.

**Underwriting profit (UWP):** Underwriting profit associated positively and significantly (at 5% level) ROA (Table 4). The result also dictates that a 1% increase in UWP leads to a  $0.0149\%$  increase in ROA of the SA general insurance firms provided other factors that could lead to the increase in ROA are controlled. This indicates that UWP positively influences the ROA of general insurance firms in SA.

**Earning asset ratio (EAR):** The EAR in this study is negatively correlated with ROA but is statistically insignificant.

## 4. DISCUSSION

Underwriting profit holds a significant position within the concerns of insurance companies, despite being subject to various laws and regulations that dictate the optimization of its benefits. D'Arcy and Garven (1990) have demonstrated that insurance companies derive their underwriting profit from the disparity between investment earnings and underwriting premiums, deducting the amount allocated to claims, taxes, loading, and administration

expenses. In essence, underwriting profit is calculated as the total net premiums minus the amount paid out for claims and other expenditures. This perspective contrasts with the findings of Oscar Akotey et al. (2013), who identified a non-complementary relationship or a trim between investment income and underwriting profit (UWP), which significantly contributes to the return on assets (ROA) for general insurance firms. On the other hand, Cummins and Doherty (2006) propose that insurance companies can achieve favorable profitability even if they generate minimal or no profit from their underwriting risks. This viewpoint contradicts the conclusions drawn by Oscar Akotey et al. (2013).

In a study like, Kamau et al. (2021) empirically examined the association between UWP and investment income for general insurance firms in Kenya. The study concluded that there was a positive correlation between UWP and investments, although it was not statistically significant. In another investigation, Ali and Faisal (2020) highlighted the significance of shareholder's funds as a parameter that influences the underwriting capacity of general insurance firms. They suggested that a greater availability of shareholder's funds for undertaking risks leads to higher profitability in underwriting. However, the findings of the current study contradict this observation, as no significant impact of shareholder's funds on the underwriting capacity of general insurance firms was found. Considering these mixed results and drawing upon the data obtained in this study, one can conclude that the relationship between UWP and the ROA of general insurance firms remains uncertain within the insurance industry. Furthermore, there is limited empirical evidence available in South Africa to further explore the association between UWP and profitability as measured by ROA.

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## CONCLUSION AND RECOMMENDATIONS

This study was conducted to examine the underwriting profit factors influencing the financial performance as measured by ROA of 36 listed South African insurance companies. The study revealed a significant negative association between the log of total investment and profitability, as measured by ROA. An increase in total investment corresponded to a decrease in ROA for general insurance firms, considering other factors affecting ROA remained constant. The data indicated a significant negative relationship between shareholders' funds and profitability. An increase in shareholders' funds resulted in a decrease in ROA for general insurance firms, assuming other factors influencing ROA were controlled. The study found a positive and significant association between underwriting profit and profitability, as measured by ROA. An increase in underwriting profit corresponded to an increase in ROA for general

insurance firms in South Africa, provided other factors influencing ROA were controlled. This suggests that underwriting profit has a positive influence on the profitability of general insurance firms in the country. The study found a negative correlation between the earning-asset ratio and ROA, although this relationship was statistically insignificant.

Based on the study's findings, the following recommendations were derived: General insurance companies in South Africa should prioritize effective risk management to minimize claims and ensure that premiums reflect assumed risks, fostering a positive underwriting profit and enhanced overall profitability. Insurers should formulate accurate pricing strategies that mirror policy-related risks, thereby ensuring premiums surpass claims, leading to positive underwriting profit and improved profitability. Streamlined claims handling processes can diminish overall claims costs, accelerate settlements, and subsequently enhance underwriting profitability and overall financial performance. Additionally, South African general insurance companies should vigilantly oversee and manage expenses in relation to revenue and underwriting profit, a practice that safeguards profitability and precludes adverse impacts. Furthermore, diversification of product offerings can serve insurance companies advantageously by distributing risk across a wider policy spectrum, thereby bolstering positive underwriting profit and overall profitability.

Consequently, future researchers are encouraged to incorporate these variables such as the business relationships of insurance companies, management competence, political factors, and risk management practices (these were not included in this study) and investigate their impact on the financial performance of insurance companies.

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## REFERENCES

- Afriyie, J. K., Twumasi-Ankrah, S., Gyamfi, K. B., Arthur, D., & Pels, W. A. (2020). Evaluating the performance of unit root tests in single time series processes. *Mathematics and Statistics*, 8(6), 656-664. <https://doi.org/10.13189/ms.2020.080605>
- Alamsyah, R. (2021). The effect of insurance premiums, claims, underwriting results, on profitability with a risk-based minimum capital ratio (RBMC) as an intervening variable in general insurance companies. *The Accounting Journal of Binaniaga*, 6(1), 61-80. <https://dx.doi.org/10.33062/ajb.v6i1.434>
- Alhassan, A. L., & Biekpe, N. (2015). Efficiency, productivity and returns to scale economies in the non-life insurance market in South Africa. *The Geneva Papers on Risk and Insurance-Issues and Practice*, 40, 493-515. <https://doi.org/10.1057/gpp.2014.37>
- Ali, A., & Faisal, S. (2020). Capital structure and financial performance: A case of Saudi petrochemical industry. *The Journal of Asian Finance, Economics and Business*, 7(7), 105-112. Retrieved from <https://db.koreascholar.com/Article/Detail/394914>

5. Amani, Z., & Markonah, M. (2020). The Influence of Premium Income, Underwriting and Investment Results on Profits Towards Joint Venture General Insurance Companies in Indonesia. *Dinasti International Journal of Management Science*, 1(4), 528-542. <https://doi.org/10.31933/dijms.v1i4.188>
6. Asare, N., Alhassan, A. L., Asamoah, M. E., & Ntow-Gyamfi, M. (2017). Intellectual capital and profitability in an emerging insurance market. *Journal of Economic and Administrative Sciences*, 33(1), 2-19. <https://doi.org/10.1108/JEAS-06-2016-0016>
7. Asongu, S. A., & Odhiambo, N. M. (2020). Insurance policy thresholds for economic growth in Africa. *The European Journal of Development Research*, 32, 672-689. <https://doi.org/10.1057/s41287-019-00234-2>
8. Burca, A. M., & Batrinca, G. (2014). The determinants of financial performance in the Romanian insurance market. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4(1), 299-308. <http://dx.doi.org/10.6007/IJA-RAFMS/v4-i1/637>
9. Butzbach, O. (2022). The elusive nature of shareholders' claims over the corporation, or the strange non-death of shareholder primacy. In R. E. Meyer, S. Leixnering, and J. Veldman (Eds.), *The corporation: Rethinking the iconic form of business organization* (pp. 31-55). Emerald Publishing Limited. <https://doi.org/10.1108/S0733-558X20220000078003>
10. Cummins, J. D., & Doherty, N. A. (2006). The economics of insurance intermediaries. *Journal of Risk and Insurance*, 73(3), 359-396. <https://doi.org/10.1111/j.1539-6975.2006.00180.x>
11. Cummins, J. D., & Outreville, J. F. (1992). An international analysis of underwriting cycles in property-liability insurance. In G. Dionne and S. E. Harrington (Eds.), *Foundations of Insurance Economics* (pp. 609-625). Springer Netherlands. [https://doi.org/10.1007/978-94-015-7957-5\\_30](https://doi.org/10.1007/978-94-015-7957-5_30)
12. D'Arcy, S. P., & Garven, J. R. (1990). Property-liability insurance pricing models: An empirical evaluation. *Journal of Risk and Insurance*, 57(3), 391-430. <https://doi.org/10.2307/252840>
13. Derbali, A., & Jamel, L. (2018). Determinants of the performance of insurance companies in Tunisia. *International Journal of Productivity and Quality Management*, 24(4), 531-542. <https://doi.org/10.1504/IJPQM.2018.093452>
14. Dorofiti, C., & Jakubik, P. (2015). *Insurance sector profitability and the macroeconomic environment* (No. 4). EIOPA, Risks and Financial Stability Department. Retrieved from <https://ideas.repec.org/p/eio/thafsr/4.html>
15. Dutta, M. M. (2020). Health insurance sector in India: an analysis of its performance. *Vilakshan – XIMB Journal of Management*, 17(1/2), 97-109. <http://dx.doi.org/10.1108/XJM-07-2020-0021>
16. Eling, M., & Jia, R. (2019). Efficiency and profitability in the global insurance industry. *Pacific-Basin Finance Journal*, 57, 101190. <https://doi.org/10.1016/j.pac-fin.2019.101190>
17. Fali, I. M., Nyor, T., & Mustapha, L. O. (2020). Insurance Specific Risk and Profitability: Evidence from Nigerian Insurance Firms. *International Journal of Accounting, Finance and Risk Management*, 5(3), 141-148. <https://doi.org/10.11648/j.ijafrm.20200503.13>
18. Furqan, M., Ramzan, M., Ullah, B., Hayat, M., Khalil, J., & Shafiq, M. A. (2023). Assessing the Efficiency of Takaful and Insurance Companies in Emerging Markets. *Journal of Social Sciences Review*, 3(2), 613-628. <https://doi.org/10.54183/jssr.v3i2.292>
19. Hissiyah, C. N., & Meylianingrum, K. (2023). The Effect of Premium Income, Investment Returns, Claim Expenses, and Operating of Net Profit on Sharia Life Insurance Company. *IJIBE (International Journal of Islamic Business Ethics)*, 8(1), 1-11. Retrieved from <https://jurnal.unissula.ac.id/index.php/ijibe/article/view/23289>
20. Isayas, Y. N. (2022). Determinants of banks' profitability: Empirical evidence from banks in Ethiopia. *Cogent Economics & Finance*, 10(1), 2031433. Retrieved from <https://core.ac.uk/download/pdf/234631382.pdf>
21. Jiang, S. J., & Nieh, C. C. (2012). Dynamics of underwriting profits: Evidence from the US insurance market. *International Review of Economics & Finance*, 21(1), 1-15. <https://doi.org/10.1016/j.iref.2011.03.005>
22. Kamau, A. M., Olweny, T., & Muturi, W. M. (2021). Financial Performance of Insurance Firms. Does Leverage and Liquidity Matter? Evidence from Kenya. *Eastern Journal of Economics and Finance*, 6(1), 1-14. <https://doi.org/10.20448/809.6.1.1.14>
23. Kaya, E. Ö. (2015). The effects of firm-specific factors on the profitability of non-life insurance companies in Turkey. *International Journal of Financial Studies*, 3(4), 510-529. <https://doi.org/10.3390/ijfs3040510>
24. Lalon, R. M., & Das, J. (2022). Investigating the dynamic impact of firm-specific and macroeconomic drivers on profitability of general insurance companies in Bangladesh. *International Journal of Research in Business and Social Science*, 11(5), 304-313. <https://doi.org/10.20525/ijrbs.v11i5.1869>
25. Lawrence, U. E., & Bernard, E. E. (2023). Environmental costs and financial performance of selected industrial goods firms in Nigeria: A moderated regression analysis approach. *Fuoye Journal of Finance and Contemporary Issues*, 4(1), 83-97. Retrieved from <https://www.fjfc.fuoye.edu.ng/index.php/fjfc/article/view/71/60>
26. Madhani, P. M. (Ed.) (2010). Resource based view (RBV) of competitive advantage: an overview. In *Resource based view: concepts and practices* (pp. 3-22). Icfai University Press, Hyderabad, India. Retrieved from [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1578704](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1578704)
27. Magweva, R., & Sibanda, M. (2023). Infrastructure Investments and Inflation in Emerging Markets-Ardl Approach. *The Journal of Developing Areas*, 57(2), 181-188. <https://doi.org/10.1353/jda.2023.0028>
28. Msomi, T. S. (2023). Macroeconomic and firm-specific determinants of financial performance: Evidence from non-life insurance companies in Africa.

- Cogent Business & Management*, 10(1), 2190312. <https://doi.org/10.1080/23311975.2023.2190312>
29. Murat, G., Tonkin, R. S., & Jüttner, D. J. (2002). Competition in the general insurance industry. *Zeitschrift für die gesamte Versicherungswissenschaft*, 91(3), 453-481. <https://doi.org/10.1007/BF03190772>
  30. Murigu, J. W. (2014). *The determinants of financial performance in general insurance companies in Kenya* (Master's Thesis). University of Nairobi. Retrieved from <http://erepository.uonbi.ac.ke/handle/11295/74685>
  31. Mwangangi, J. (2020). *Effect of underwriting results on profitability of General Insurance Industry in Kenya* (Master's Thesis). University of Nairobi. Retrieved from <http://erepository.uonbi.ac.ke/handle/11295/154387>
  32. Ngunguni, J. N., Misango, S., & Onsiro, M. (2020). Examining the effects of financial factors on profitability of general insurance companies in Kenya. *International Journal of Finance and Accounting*, 5(1), 1-18. <https://doi.org/10.47604/ijfa.1066>
  33. Nzuzza, Z. W., & Msomi, T. S. (2023). The Relationship Between Macroeconomic Factors and Profitability of Reinsurance Companies in Africa: An Application of System GMM-Model. *International Journal of Environmental, Sustainability, and Social Science*, 4(5), 1334-1344. <https://doi.org/10.38142/ijess.v4i5.768>
  34. Olarewaju, O. M., & Msomi, T. S. (2021). Intellectual capital and financial performance of South African development community's general insurance companies. *Heliyon*, 7(4). <https://doi.org/10.1016/j.heliyon.2021.e06712>
  35. Olarewaju, O. M., Oladejo, T. M., & Olarewaju, O. O. (2017). Firm-Specific Factors that Affect the Profitability of Nigerian Insurance Sector. *EuroEconomica*, 37(1). Retrieved from <https://www.proquest.com/openview/e11e1bbaa1d-547fe0df937dcf2bb245/1>
  36. Oscar Akotey, J., & Abor, J. (2013). Risk management in the Ghanaian insurance industry. *Qualitative Research in Financial Markets*, 5(1), 26-42. <https://doi.org/10.1108/17554171311308940>
  37. Oscar Akotey, J., Sackey, F. G., Amoah, L., & Frimpong Manso, R. (2013). The financial performance of life insurance companies in Ghana. *The Journal of Risk Finance*, 14(3), 286-302. <https://doi.org/10.1108/JRF-11-2012-0081>
  38. Palea, V. (2022). Accounting for sustainable finance: does fair value measurement fit for long-term equity investments? *Meditari Accountancy Research*, 30(1), 22-38. <https://doi.org/10.1108/ME-DAR-07-2020-0965>
  39. Panda, B., & Leepsa, N. M. (2017). Agency theory: Review of theory and evidence on problems and perspectives. *Indian Journal of Corporate Governance*, 10(1), 74-95. <https://doi.org/10.1177/0974686217701467>
  40. Phesa, M., & Sibanda, M. (2022). A Manifestation of Impression Management in Corporate Reporting in Jse Top 40 Listed Companies. *Journal of Business and Social Review in Emerging Economies*, 8(3), 669-682. Retrieved from <https://typeset.io/papers/a-manifestation-of-impression-management-in-corporate-1xuskg65>
  41. Purnamawati, I. (2019). The nexus between risk and investment factors on insurance companies profit in Indonesia. *Jurnal Riset Akuntansi dan Keuangan*, 7(2), 379-388. Retrieved from <https://core.ac.uk/download/pdf/295375461.pdf>
  42. Pyykkönen, L. (2021). *Analyzing IPO Returns in the Nordic Markets* (Master's Thesis). Lappeenranta-Lahti University of Technology LUT. Retrieved from <https://lutpub.lut.fi/handle/10024/162977>
  43. Rajapathirana, R. J., & Hui, Y. (2018). Relationship between innovation capability, innovation type, and firm performance. *Journal of Innovation & Knowledge*, 3(1), 44-55. <https://doi.org/10.1016/j.jik.2017.06.002>
  44. Shawar, K., & Siddiqui, D. A. (2019). Factors affecting financial performance of insurance industry in Pakistan. *Research Journal of Finance and Accounting*, 10(5), 29-41. Retrieved from <https://core.ac.uk/download/pdf/234632668.pdf>
  45. Siopi, E., & Poufinas, T. (2023). Impact of Internal and External Factors on the Profitability and Financial Strength of Insurance Groups. *International Advances in Economic Research*, 29, 129-149. <https://doi.org/10.1007/s11294-023-09873-y>
  46. Soye, Y. A., Olumide, R. O., & Adeyemo, D. L. (2022). Reinsurance: A Risk Management Instrument for Insurance Companies' Profitability (A Case of Non-Life Insurance in Nigeria). *Economic Insights-Trends & Challenges*, 11(2), 21-36. <https://doi.org/10.51865/eitc.2022.02.02>
  47. Wahyono, W., Nurochim, N., & Palupi, I. D. (2021). The Effect of Premium Income, Claim Payment, Risk-Based Capital, Investment Return, and Underwriting Result on the Profits of Insurance Companies Listed on the Indonesia Stock Exchange for the 2015–2018 Period. *Riset Akuntansi dan Keuangan Indonesia*, 6(2), 142-153. Retrieved from <https://journals.ums.ac.id/index.php/reaksi/article/view/16125>
  48. Wolff, J. (2022). *Cyberinsurance Policy: Rethinking Risk in an Age of Ransomware, Computer Fraud, Data Breaches, and Cyberattacks*. MIT Press. <https://doi.org/10.7551/mitpress/13665.001.0001>
  49. Yang, Z., & Feng, J. (2013). Study on Evaluation System of Sustainable Development Capability of Chinese Property and Casualty Insurance Enterprises. *Management Science and Engineering*, 7(2), 117. Retrieved from <http://www.flr-journal.org/index.php/mse/article/viewFile/jmse.1913035X20130702.3016/4307>
  50. Zainudin, R., Ahmad Mahdzan, N. S., & Leong, E. S. (2018). Firm-specific internal determinants of profitability performance: An exploratory study of selected life insurance firms in Asia. *Journal of Asia Business Studies*, 12(4), 533-550. <https://doi.org/10.1108/JABS-09-2016-0129>
  51. Zardkoohi, A., Harrison, J. S., & Josefy, M. A. (2017). Conflict and confluence: The multidimensionality of opportunism in principal-agent relationships. *Journal of Business Ethics*, 146, 405-417. <https://doi.org/10.1007/s10551-015-2887-7>