

# The Determinants of Insurance Firm's Profitability in Tanzania: An Empirical Investigation

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## Abstract

This paper sought to analyze some of the supposed determinants of profitability for insurance firms in Tanzania. Though the success of insurance companies has been linked to the accessibility of financial services by various scholars, yet the way profitability of companies influence success of firms has not been well explored. To undertake the study 10 insurance companies were involved out of 25 general insurance companies operating in Tanzania for 10 years from 2008 to 2017. The data was obtained from financial statements given on TIRA Report and some of them from documentary review. The paper carried out preliminary test of panel unit root to check for stationarity of variables. The appropriate fixed and random effect model test was employed to determine the fitness of the model using the Hausman specification test. Age of the firm found to be statistically influence profit of a company at 5% level while claims cost found to be statically significant at 1% level. Size of a company was found to have no significant contribution to the firms' profitability. It is therefore recommended that the government and the regulator should smoothen rules, regulations and procedures so that penetration of insurance business to be high and also insurance company should have proper management of claims so that they can reduce expenses and increase profit of a company.

**Keywords:** return on assets, return on equity, gross domestic product, profitability, panel data models

## 1. Introduction

The market value of any firm normally will depends on best performance of the industry in general and particularly from signals obtained from financial performance of specific firm. This will be coupled with the role of firm leading towards the growth and development of the whole industry which ultimately leads to the overall success of the country's economy. Over the years, measuring the financial performance of banks and non-banks financial institutions has gained much attention in the corporate finance literature because as intermediaries just like insurance companies, these firms in the sector are not only providing the mechanism of saving money from surplus spenders and transferring risk, but also helps to channel mobilized funds in efficient and effective way from surplus economic units to deficit economic units so as to support the saving and investment activities in the economy (Hailegebreal, 2016).

Following given above argument, insurance firms now days are the one that play significant role in the service-based economy in pooling risks and its services are now being integrated into wider financial industry. Both private and public insurance companies, which involves the organizations that provide fire, accident, life, causality and many other forms of insurance. In general, the main objective of all insurance companies is maximizing their profit resulting from pooling of risks form different economic agents, this is because one goal of any financial manager is to maximize the owners' wealth and profitability and its very important determinants of how this firm perform (Berhe & Kaur, 2017). Though it will be affected with firm-specific factors, on the other hand macroeconomic factors also play crucial role in influencing insurance companies' profitability overtime.

In the literature investigation of the determinants of corporate profitability has received much attention of the economists around the world. During early days, such studies encompassed developed countries only focusing mainly on banking sector. Over the time, a number of studies dealing with insurance companies' profitability in emerging markets have been conducted such as Kozak (2011), Akbas & Karaduman (2012), Burca & Batrinca (2014), AlGhusin (2015), Kaya (2015), Ortynski (2016), and Horera (2019) just to mention few. However, from

empirical point of views, there is still no consensus on what determines insurance companies' profitability. In the context of Tanzania there are small and big firms operating in the insurance business. The size and age of the firm are expected to determine the amount of profit earned by the concerned firms. It is expected that, bigger and older firms are likely to earn a larger amount of profit than the smaller and new ones. This variation of profits among firms suggests that firm-specific factors may play a crucial role in influencing insurance companies' profitability. It is therefore essential to investigate empirically these factors and how they help insurance companies to take actions that will increase their profitability and investors to forecast the profitability of insurance companies in Tanzania. With this regard, this paper seeks to examine the firm specific as well as macroeconomic determinants of insurance firms' profitability in Tanzania.

## 2. Literature Review

The literature examining the performance of insurance companies has attracted the attention of several researchers; especially the interest in understanding the factors responsible for financial performance. The attention devoted in literature to the determinants of profitability in insurance industry has been low if compared to the extensive studies of the banking industry and the financial sector. Because of the various results obtained from different studies exploring the determinants of profitability in the insurance industry, the studies will be subsequently presented together with their main empirical results.

### 2.1 Age and Profitability of a Firm

In the literature the relationship between firm age and profitability is contentious. Some reported the positive and significant relationship between age and profitability (Papadogonas, (2007); Halil & Hasan, (2012); Akinyomi & Olagunju (2012); Boadi & Lartey, (2013); Hailegebreal, (2016); Kramaric et al., (2017); Derbali & Jamel, (2019)). On the other hand, other researchers have reported negative relationship (Majumdar, (1997); Dogan, (2013); Coad et al., (2013); Ofuan et al., (2016) and Maja et al., (2017)). This mixed findings observed in the literature has made the debate on the impact of firm's age on profitability inconclusive. The theory of learning by doing, explains the positive relationship, which posits that as the age of the firm increases, there is the likelihood of improvement in their productive efficiency over time by learning from their experience.

### 2.2 Size and Profitability of a Firm

The size of the firm includes the capability and capacity of a firm in the context of the variety and amount of the production capacity that a firm can offer to its clients simultaneously. Probably the biggest advantage for a firm of having a large size is the opportunity to meet economies of scale (Kaukab, 2019). Larger firms can exercise a greater influence on other stakeholders. With the rise of globalization, in the contemporary global economy, large size firms are having more influence in the corporate environment (Derbali & Jamel, 2016).

In the literature there is also a conflicting result concerning size and profitability of the firm. Some the researchers found a positive and significant relationship between size of the firm and profitability (Papadogonas, (2007); Jonsson, (2007); Lee, (2009); Asimakopoulos et al., (2009); Velnampy & Nimalathan, (2010); Pervan & Parvid, (2010); Halil & Hasan, (2012); Akinyomi & Olagunju, (2012); Akbas & Karaduman, (2012); Kipesha, (2013); Ghafoorifard et al., (2014)). The positive impact of size on profitability may be viewed from the economies of scale perspective. Economies of scale are the cost advantage that enterprises obtain due to size. As output increases, the average unit cost decreases.

Negative relationship between size of the firm and profitability has also been reported by different scholars' in the literature (Ammar et al., (2003); Becker et al., (2010); Vijayakumar & Tamizhselvan (2010); Maja & Josipa (2012); Shaheen, & Malik (2012); Wasike & Emba, (2016)). The negative impact of size on profitability may be viewed from the diseconomies of scale perspective. Diseconomies of scale are the cost disadvantage that enterprises obtain due to size. As output increases beyond optimal point, the average unit cost increases.

### 2.3 Claims Expenses and Profitability of a Firm

Claims cost is usually calculated as the total losses incurred by an insurer plus adjustment expenses. However loss ratio is used to calculate how much an insurer pay as claims in relation to the premium earned. Loss ratio is the ratio of total losses incurred (paid and reserved) in claims plus adjustment expenses divided by the total premium earned (Tajudeen, 2014). The lower the loss ratio the better the profitability because higher loss ratios may indicate poor risk selection. Following the findings of Dey et al., (2015); Burca & Batrinca, (2014); and Mehari & Aemiro, (2013), all confirmed the existence of an indirect association which could be measured through return on equity (ROE) and return on assets (ROA) as proxies. However, Malik (2011) established that there was a direct connection between claims costs and profitability.

### 3. Methodology

#### 3.1 Data Type and Sources

The study focuses on examining the factors affecting profitability of insurance firms in Tanzania. It is based on secondary data which were collected from TIRA and some from the website of selected insurance companies in Dar es Salaam region. The insurance companies which have been considered for this study include Alliance, Britam, Heritage, Jubilee Insurance Co. (T), MGen Insurance Company, National Insurance Corporation (T) Ltd, Phoenix Assurance company, Reliance, Tanzania and Zanzibar Insurance Corporation Ltd. The data collected for the named selected insurance companies covered a period of ten years (2008-2017).

#### 3.2 Model Specification

The basic discussion for estimation techniques of static panel data is a regression model of the following form.

$$Y_{it} = \beta_1 + \sum_{j=2}^k \beta_j X_{jit} + \sum_{p=1}^s \gamma_p Z_{pi} + \delta t + \epsilon_{it}$$

Where  $Y$  is the dependent variable, the  $X_j$  are observed explanatory variables, and the  $Z_p$  are unobserved explanatory variables, such as firm specific characteristics. The index  $i$  refers to the unit of observation,  $t$  refers to the time period,  $j$  and  $p$  are used to differentiate between different observed and unobserved explanatory variables. A trend term  $t$  has been introduced to allow for a shift of the intercept over time.  $\epsilon_{it}$  is a random or disturbance term.

### 4. Empirical Results and Discussion

#### 4.1 Panel Unit Root Test

In analyzing the panel unit roots test the study used Hadri Lagrange Multiplier (2000) test in the context of panel data. From the Table 1 presented it shows that null hypothesis at level is rejected because it does not contain some unit root this is due to the fact that at  $H_0$ : All panels are stationary and alternative hypothesis,  $H_1$ : Some panels contain unit roots. Results from Table 1 indicate that all variables of interest were found to be stationary after taking first difference at different levels of statistical significance.

Table 1. Hadri LM Panel Unit Root Test Results

Series	At Level		At First Difference	
	Tau Statistic	P Value	Tau Statistic	P Value
ROA	2.2978	0.0108	-2.0372	0.9792
Firm Size	14.2360	0.0000	1.6196	0.0527
Age	15.7473	0.0000	3.2143	0.0201
Claims Cost	2.9373	0.0017	0.6803	0.2481
GDP	2.6061	0.0046	-2.7511	0.9970
Inflation	5.9006	0.0000	-2.1393	0.9838

Source: Authors Computation (2020)

#### 4.2 Regression Estimation Results

##### 4.2.1 Fixed Effect Model Results

Table 2 provides empirical results for the fixed effect model. Basing on the table it is shown that F statistic is 3.70 and the probability value is very small that is 0.0045 which is less than 5%. This indicates that the coefficient of this model is not equal to zero such as size of the firm (0.0000671), age of the firm (-0.5176806), claims cost (-0.154652), GDP growth (0.9327942) and inflation (-0.125893). Profitability of the firm (ROA) depend on size of the firm, age of the firm, claim cost of the company, GDP and inflation. Therefore basing on the model age of the firm and claims cost are two variables which are significant to explain the profitability of the firm (ROA) because probability value is very small to explain the model and size of the firm, GDP and inflation is insignificant to explain the model because the significant level is more than 5%. So here age of the firm and claims cost are the only significant variables to explain the ROA. With the FE model the empirical

findings imply that profitability of insurance companies in Tanzania is significantly affected by claims cost and firms age. While the claims cost and age of firm affects the firm's profitability negatively. The rest of the variables under this study were observed to have no significant effect of the firms' profitability.

Table 2. Fixed Effect Model Estimation Results

	<b>Coefficients</b>	<b>t- value</b>	<b>p&gt; t </b>
<b>Size of a firm</b>	0.0000671	1.27	0.207
<b>Age of a firm</b>	-0.5176806	-2.21	0.030
<b>Claims cost</b>	-0.154652	-3.37	0.001
<b>GDP Growth</b>	0.9327942	1.66	0.101
<b>Inflation</b>	-0.125893	-0.83	0.408
<b>Constant</b>	24.93891	2.58	0.012

Note: F statistic = 3.70 and Prob > F = 0.0045

Source: Authors Computation (2020)

#### 4.2.2 Random Effect Model Empirical Results

The results based on RE model are presented on Table 3. From the table it is show that probability value is more than 5% meaning that the coefficient is nearly equal to zero. All the variables are not significant to explain the profitability of the selected insurance companies (ROA) with exception to the firms' age. The probability values are greater than 5% with the chi-square of 10.32 and the probability of chi square 0.0668 and the value coefficients of all variables were shown to have no significant effect of the profitability of the companies.

Table 3. Random Effect Model Estimation Results

	<b>Coefficients</b>	<b>z- value</b>	<b>p&gt; z </b>
<b>Size of a firm</b>	0.0000156	0.42	0.675
<b>Age of a firm</b>	0.0400997	1.69	0.090
<b>Claims cost</b>	-0.0486881	-1.21	0.225
<b>GDP Growth</b>	0.6101101	1.05	0.295
<b>Inflation</b>	-0.0458521	-0.30	0.762
<b>Constant</b>	1.331851	0.26	0.792

Note: Wald chi2 = 10.32 and Prob > chi2 = 0.0668

Source: Authors Computation (2020)

#### 4.2.3 Hausman Specification Test

The results for the Hausman Specification Test are presented on Table 4. Since observations in the data set in this study can be described as being a random sample from a given company, fixed effects and random effects regression models were estimated. In order to determine which model is appropriate; then the Hausman test is being conducted to check for the appropriate model. Based on the results presented on Table 4 the null hypothesis is being rejected and conclude that the fixed effects model is more appropriate. While chi square is 27.22 and the probability of chi square at random model after Hausman test is 0.0001 which is not significant at 5% level. The fixed effect model is the best model to explain the variables both dependent and independent variables of the firm.

Table 4. Hausman Specification Test Results

Variables	Coefficients	Coefficients	Difference (b-B)
	Fixed (b)	Random (B)	
Size	0.0000671	0.0000156	0.0000515
Age	-0.5176806	0.0400997	-0.5577803
Claim cost	0.9327942	-0.0486881	-0.1059639
GDP	-0.125893	0.6101101	0.3226842
Inflation	-0.125893	-0.0458521	-0.0800409

Note:  $\chi^2 = 27.22$  and  $\text{Prob} > \chi^2 = 0.0001$

Source: Authors Computation (2020)

## 5. Conclusion

This paper investigates the determinants of insurance companies' profitability. Firm specific effects and macroeconomic factors on profitability measured with ROA were used in order to confirm the robustness of the results. The analysis is conducted using panel data models for ten (10) insurance companies covering the period 2008 – 2017 in Tanzania. Age of the firm found to be statistically influenced profit of a company at 5% level while claims cost found to be statically significant at 1% level. Size of a company was found to have no significant contribution to the firms' profitability. It is therefore recommended that the government and the regulator should smoothen rules, regulations and procedures so that penetration of insurance business to be high and also insurance company should have proper management of claims so that they can reduce expenses and increase profit of a company. This study is based on small sample size out of 25 non insurance companies only ten were selected because for most of the firms were developed after 2008 so it was difficult to include them in the study. Therefore, future research can get conclusive findings by increasing the sample size. For this research, only one performance variable was used (return on assets). Other studies may include other performance variables, such as ROE, to study if the same findings are applicable or not. The empirical literature suggests that most of the studies have been conducted on large scale businesses; therefore, studies on small-scale companies might reveal some interesting findings. A comparative study can also be conducted comparing findings from emerging and developed countries.

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