

RESEARCH ARTICLE

# Determinants of Firm's Internals & Macroeconomic Factors on Financial Performance of Ethiopian Insurers

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Insurance acts as a social instrument that indemnifies the human life and properties against unforeseeable risks. It is imperative for the insurance companies to be profitable while obliging the society and nation as a risk saver of insurable risk. The research aims to investigate the association between specific internals and macroeconomic factors and the financial performance of insurance companies in Ethiopia. A quantitative approach is applied in this research by adopting inferential statistics with a balanced panel data of nine insurance companies for 15 years (2002–2016). Explanatory analysis is deployed where Pearson's correlation and OLS regression model are applied to examine the association between dependent and independent variables. GDP per capita and size of the companies demonstrate a positive and significant association, whereas leverage, liquidity, and underwriting risk are negative but significant with returns of assets. The growth of assets accelerates financial performance through the establishment of more branches and improved living situation of the people. Additionally, reduction of underwriting risk by transferring surplus risk to the reinsurers, managing capital structure with minimum dependence on borrowed capital, and deployment of premium earned in return fetching investments speed up the financial performance of insurance companies.

**Keywords:** financial performance, GDP per capita, leverage, liquidity, market share, return of assets, size, underwriting risk.

**JEL Classifications:** G22, L25, C33

A country has a dynamic financial system when economic growth is visualized with the operation of healthy financial institutions, organized financial markets, exchange-traded scrips and customer-oriented

financial services. The insurance sector, being an integral chunk of the financial system, plays an imperative role as a risk saver of the citizens and properties from the perils of unforeseeable natural disasters.

Ethiopia is reeling on frequent natural catastrophes by way of scanty rainfall and volcanic eruptions, causing death and damage to properties that result in slothful economic growth. Insurance is a social need that insulates the people and properties from the perils of such risks that triggers the path of sustainable economic growth. Das, Davies, and Podpiera (2003) concluded that insurance is a source of financial system vulnerability, and the failure of this sector is due to assimilation of banking type activities, investing in risky assets like real estate and junked bonds and cross-shareholding with bank increase systemic risk.

Insurance plays an imperative role in the economic growth of a nation. They are the financial intermediaries that provide long-term finance and effective risk management. The insurance sector acts as the risk pooling service by bearing the losses of the claimants, which reduces the amount of capital (Feyen, Lester, & Rocha, 2011). The history of insurance business was initiated in 1905 during the reign of King Minilik-II by the Bank of Abyssinia. Many private insurance companies have started functioning after Ethiopia was liberated from the clutches of Italy during the period of King Hailessalssie. According to Proclamation No. 261/1975 by the Federal Democratic Republic of Ethiopia, 13 insurance companies have been registered under the National Bank of Ethiopia (2017). Seventeen insurance companies are presently operating in Ethiopia.

## Literature Review

### *Internal and Macroeconomic Variables*

The following empirical pieces of evidence are discussed below on the financial performance of insurance companies and various firm's internal and macroeconomic variables.

**Return of assets:** The proxy of financial performance as a dependent variable has been taken in the study as returns of assets (ROA). Several pieces of literature have confirmed the use of ROA as the dependent variable. Athanasoglou, Brissimis, and Delis (2005) noted that ROA is part of a managerial performance to generate profit from the use of assets held in the business. The general insurer acts as an underwriter whose financial performance would be affected by the quantum of funds invested in the assets that earn a return and its magnitude. Chen and

Wong, (2004) have taken factors that influence the financial performance (return on total assets ratio) in Romania during the interval 2008–2012 and observed that financial performance is positively significant with size. Enormous premium growth creates high underwriting risk that requires maintaining adequate technical reserves. Khrawish (2011), Martani and Munaiseche (2010), and Ali, K., Akhtar, M.F., Ahmed, H.Z., and Hafiz, Z. A. (2011) have used both Return on Assets (ROA) and Return on Equity (ROE) as a measure of financial performance.

The following works of literature confirm that internal variables of the insurance companies play a crucial role in the operational efficiencies and their ripple effect on financial performance. Zainudin, Shahnaz, Mahdzan, and Leong (2018) applied the random effect model and noted that the profitability of Asian life insurance firms is significantly associated with the volume of capital, size, and underwriting risk. Premium growth, asset tangibility, and liquidity are insignificant predictors of the profitability performance of these life insurance firms. Eling and Marek (2012) have used two-way panel regression analysis with fixed and random effects on 35 German and U.K. insurance companies for the period 1997 to 2010 and observed that the company size, capital structure, liquidity, and economic development positively affect variations in stock prices.

**Size of the company.** Size refers to the creation of more branches that results in an increased volume of business, thereby increasing assets. The size of the insurance companies, gross premiums written, and capital have a positive relationship on financial performance (Almajali, Alamro, & Al-Soub, 2012; Berry-Stölzle, Liebenberg, Ruhland, & Sommer, 2012). However, Adams and Buckle (2013) argued that financial performance is not affected by size. Chen and Wang Renbao and Kie (2004) have stated that larger firms are more profitable because they have achieved the economies of scale.

**Leverage ratio.** When the insurance company inducts debt capital to the business, it is leading to financial leverage because of a tax shield, although the company can succumb to default risk. Onaolapo and Kajola (2010) revealed that the debt ratio has a significantly negative impact on the firm's performance measures (ROA and ROE). Ejigu (2016) conducted a study on insurance companies in Ethiopia for the period spanning from 2005 to 2012 and observed that

leverage is negative and significant with profitability. However, Meher K.C. and Ajibie D., (2018) have observed that debt finance exerts a positive influence on firm's profitability. Omondi and Muturi (2013) took 29 listed firms (excluding listed banks and insurance companies) which have been operating at the Nairobi Securities Exchange from 2006 to 2012. They posited that low leverage ratio has a better influence on financial performance (ROA).

**Asset growth rate.** Asset growth rate is described as the changes in total assets of an organization between the current and previous year to the previous year. As higher asset growth rate put the insurance company's vulnerability to high risk, it is insignificant to financial performance (Batinca Burca and Batinca, 2014).

**Volume of capital.** Volume of capital is expressed as total capital of an organization to total assets. Hansen, (2009) observed that financial performance is backed by injecting more capital to the insurance business leading to economies of scale by opening more branches.

**Underwriting risk.** The insurers undertake to accept default risk when people and properties are covered. Srivastava and Ray (2013) argued that income from underwriting insurance and return on investment are the proxies of financial performance. Underwriting return has a positive relationship on investment that would increase the financial performance of the life insurance companies (Akotey, Sackey, Amoah, & Manso, 2013).

**Liquidity.** Liquidity is the capacity of an organization to meet the immediate financial obligation, and it is expressed as current assets to current liabilities. Hakim and Neaime (2005) and Shiu (2007) found that profitability is driven by more liquid assets, whereas Ahmed, Ahmed, and Usman (2011) had an opposite view between liquidity and financial performance. Further, liquidity ratio is not found significant with returns of assets being proxy of short term financial position of the firm. (Meher K. and Getaneh H., 2019)

### **External Factors**

It is seen that whenever a country experiences economic growth, more people and properties are covered as a shield by the insurers. The returns of insurance companies are dependent on various macroeconomic indicators of economic growth. Beck and Webb (2003) observed that the profitability of

insurance companies is positively affected by economic growth vis-a-vis macroeconomic factors.

**Market share.** Market share is a place of an entity in the market with respect to its competitors and described as the gross premium to total premium of the industry as a whole. Kozak (2011) has concluded that the financial performance of non-life insurance companies is influenced by GDP per capita and market share of foreign-owned companies.

**GDP per capita.** GDP per capita refers to the change in the trend of a nation's living standard of the people of a country. Burca and Batinca, (2014) analyzed the determinants of profitability of the insurance sector within the macroeconomic context and found GDP per capita as a significant factor affecting the insurance sector as economic growth improves the level of income and living standard of the people and as a result purchasing power of the people increases. Haiss and Sulmegi (2008) explored that an index for a healthy economy is reported in the form of GDP growth. They explained that the performance of the insurance industry is dependent on the overall economic development of the country.

**Inflation.** Inflation is the measurement of price rise of goods and merchandises for a particular period of a country, which hinders economic growth. Eling and Luhnen (2008) posited that premiums are directly affected by the inflation rate in the country. Meher K. and Getaneh H., (2019) argued that the performance of the firm is insulated from the effect of macroeconomic factors like GDP per capita and inflation.

Thus, the insurance sector would succumb to financial distress in the event of unprecedented claims due to national catastrophes. Further, empirical studies have confirmed that financial performance is dependent on various firms' internal and macroeconomic factors. So, the study of financial performance of insurance sector is relevant as a part of risk savers strategy, whereas the remaining profitability, in the long run, would boost the confidence of the society, communities, and policy regulators. The explanatory variables consist of firm's specific internal factors such as the size of the company, asset growth rate, underwriting risk, volume of capital, leverage ratio, liquidity, and three macro factors like GDP per capita, market share, and inflation. The return of assets has been taken as the proxy of financial performance. The objective of the study is to identify and investigate the

association of specific internals and macro factors on the financial performance of Ethiopian insurers.

The hypotheses are outlined below:

$H_0$  – Specific factors do not have a relationship and influence on financial performance.

$H_1$  – Specific factors have a relationship and influence on financial performance.

$H_0$  – Macro factors do not have a relationship and influence on financial performance.

$H_1$  – Macro factors have a relationship and influence on financial performance.

[NB: Specific factors are size, asset growth, underwriting risk, volume of capital, leverage, and liquidity. Macro factors are market share, GDP per capita, and inflation. Proxy of financial performance is ROA.]

The details of the proxies and symbols of dependent variables and internal as well as external variables are shown in Table 1.

### **Data and Methodology**

The research has adopted a quantitative approach, which is considered as a systematic empirical investigation of observable phenomena through statistical techniques (Creswell 2009). Explanatory analysis is used to identify the cause and effect relationship between one dependent variable called ROA and nine independent variables consisting of six firm's internal factors that are size of the company, leverage ratio, asset growth rate, volume of capital, underwriting risk, and liquidity; and three macroeconomic factors, which are market share, GDP per capita, and inflation.

A sample of nine insurance companies has been taken out of 17 insurance companies registered at the National Bank of Ethiopia. The balanced panel data for a period of 15 years (2002 to 2016) has been prepared from the financial statements of published annual reports of the insurance companies. Pearson's correlation method and OLS regression model are

**Table 1. List of Variables and Their Proxies and Symbols**

Variables	Symbol	Proxies
Return of assets	ROA	The ratio of profit before tax to total assets.
Company Size	SIZ	Natural log of total assets.
Asset growth rate	GR	Percentage change in total assets between the current year and previous year to the previous year.
Underwriting risk	UWR	The ratio of net claims incurred to net premium earned.
Volume of capital	VOC	This is a measure of capital strength, calculated as total capital to total assets.
Leverage	LEV	Total debts to total capitals.
Liquidity	LIQ	Current assets to current liabilities.
Market share	MS	Total gross written premium of an insurance company to total gross written premium of the industry at a given period.
Gross domestic product per Capita	GDP	Natural log of gross domestic product per capita.
Inflation rate	INF	Annual inflation rate.

deployed to estimate the association between the dependent variable and independent variables. All the analysis has been done in STATA-13 software. The specification of the regression model specification is described as:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + \beta_2 X_{it} + \beta_3 X_{it} + \epsilon_{it}$$

(i = 1... N; t = 1... T)

$$ROA_{it} = \beta_0 + \beta_1 SIZ_{it} + \beta_2 GR_{it} + \beta_3 UWR_{it} + \beta_4 VOC_{it} + \beta_5 LEV_{it} + \beta_6 LIQ_{it} + \beta_7 MS_{it} + \beta_8 GDP_{it} + \beta_9 INF_{it} + \epsilon_{it}$$

Where,

- i stands for the  $i^{th}$  cross-sectional unit and t for the  $t^{th}$  time period,

- $\beta_0$  is the intercept for each entity,
- $Y_{it}$  is the dependent variable  $ROA_{it}$ ,
- $X_{it}$  represents one independent variable (SIZ, GR, UWR, VOC, LEV, LIQ, MS, GDP and INF),
- $\beta_{1-9}$  is the coefficients for the independent variables, and
- $\epsilon_{it}$  is the error term.

### Results and Discussion

This section discusses the output in STATA-13 and SPSS-20 by applying the Pearson's correlation analysis, variable inflation factor (VIF) for testing multicollinearity, and OLS regression model along with the Hausman test. Pearson's correlation has been applied in Table 2.

**Table 2.** Pearson's Correlation Analysis, N=135, Significance (2 tailed)

		ROA	SIZ	GR	UWR	VOC	LEV	LIQ	MS	GDP	INF
<b>ROA</b>	Pearson's Correlation	1									
	Sig. (2-tailed)										
<b>SIZ</b>	Pearson's Correlation	.336**	1								
	Sig. (2-tailed)	.000									
<b>GR</b>	Pearson's Correlation	.172*	.009	1							
	Sig. (2-tailed)	.046	.915								
<b>UWR</b>	Pearson's Correlation	-.331**	.260**	-.175*	1						
	Sig. (2-tailed)	.000	.002	.042							
<b>VOC</b>	Pearson's Correlation	.040	-.540**	-.133	-.415**	1					
	Sig. (2-tailed)	.647	.000	.124	.000						
<b>LEV</b>	Pearson's Correlation	-.123	.629**	.162	.443**	-.814**	1				
	Sig. (2-tailed)	.156	.000	.060	.000	.000					
<b>LIQ</b>	Pearson's Correlation	.065	.109	-.144	-.282**	.292**	-.168	1			
	Sig. (2-tailed)	.450	.206	.095	.001	.001	.051				
<b>MS</b>	Pearson's Correlation	.341**	.477**	.037	-.070	-.242**	.292**	.190*	1		
	Sig. (2-tailed)	.000	.000	.672	.420	.005	.001	.027			
<b>GDP</b>	Pearson's Correlation	.247**	.408**	.403**	.195*	-.325**	.426**	-.048	.373**	1	
	Sig. (2-tailed)	.004	.000	.000	.023	.000	.000	.580	.000		
<b>INF</b>	Pearson's Correlation	.015	.213*	.063	.130	-.347**	.251**	-.095	-.076	.281**	1
	Sig. (2-tailed)	.863	.013	.469	.133	.000	.003	.272	.384	.001	

\*\* Correlation is significant at the 0.01 level (2-tailed). \* Correlation is significant at the 0.05 level (2-tailed).

### SPSS-20 Results of Pearson's Correlation

Table 2 reflects that the size, market share, and GDP per capita has a positive and significant relationship at 1% with ROA as  $p < 0.01$  with all these variables. Asset growth rate shows a positive and significant relationship at 5% with ROA as  $p < 0.05$ . Further, underwriting risk demonstrates a negative and significant relationship at 1% with ROA as  $p < 0.00$ . Thus, the growth of financial performance of the insurance companies depends on the increase of size, asset growth rate, market share, and GDP per capita coupled with the reduction of underwriting risk. Also, the volume of capital, liquidity, and inflation show a positive but not significant relationship with ROA, whereas leverage reveals a negative and insignificant relationship with ROA. None of the correlation coefficients of the independent variables exceeds 0.9, which reveals that there is no problem with multicollinearity between

the dependent and independent variables, according to Field (2009).

Multicollinearity test is applied to investigate the collinearity among the independent variables. Table 3 reveals that the multicollinearity among the independent variables do not exist as all the independent variables show VIF below 10, as noted by (Gujarati, 2004). This implies that all the independent variables are appropriate for regressing with the dependent variable.

The OLS regression model is applied to investigate the association between the dependent and independent variables. At first Hausman test is applied to discover superiority between fixed effect and random effect OLS regression.

The Hausman test as per Table 4 shows that the  $p$ -value (0.0762) is not significant as  $p > 0.05$ , which implies that the random effect regression model is

**Table 3.** Multicollinearity Statistics

Variables	SIZ	GR	UWR	VOC	LEV	LIQ	MS	GDP	INF
<b>Tolerance</b>	0.457	0.674	0.614	0.277	0.257	0.744	0.600	0.532	0.758
<b>VIF</b>	2.187	1.483	1.630	3.607	3.892	1.344	1.665	1.879	1.32

Dependent Variable: ROA

Source: SPSS result for multicollinearity

**Table 4.** Hausman Test

	(b) fe	(B)re	b-B(Difference)	sqrt(diag V b-V_B)
SIZ	0.0439570	0.045014	-0.0010568	0.000878
GR	0.0173300	0.017825	-0.0004953	0.003892
UWR	-0.0603034	-0.06176	0.0014526	0.003059
VOC	-0.0573701	-0.04598	-0.0113863	0.009791
LEV	-0.0238385	-0.0229	-0.0009353	0.000869
LIQ	0.0059274	-0.00671	0.0007812	0.000452
MS	0.0165000	0.016656	-0.0001561	0.002777

b = consistent under Ho and Ha

B = inconsistent under Ha, efficient under Ho;

Test: Ho: difference in coefficients not systematic

$$\text{chi2}(7) = (b-B)'[(V_b-V_B)^{-1}](b-B) = 12.84$$

$$\text{Prob}>\text{chi2} = 0.0762$$

### Stata-13 Result of Hausman Test

$H_0$  – Fixed effect model is appropriate.

$H_1$  – Random effect model is appropriate.



**Table 5.** *Random Effect OLS Regression Analysis*

ROA	Coef.	Std.Error	z	P > z	95% Conf. Interval	
SIZ	0.0450138	0.00661	6.81	0.000	0.032059	0.0579685
GR	0.0178253	0.016041	1.11	0.266	-0.01361	0.0492648
UWR	-0.061756	0.015457	-4	0.000	-0.09205	-0.0314609
VOC	-0.0459838	0.036599	-1.26	0.209	-0.11772	0.0257494
LEV	-0.0229033	0.004298	-5.33	0.000	-0.03133	-0.0144788
LIQ	-0.0067086	0.003098	-2.17	0.030	-0.01278	-0.0006377
MS	0.0166561	0.011102	1.5	0.134	-0.0051	0.0384151
GDP	0.0532655	0.026366	2.02	0.043	0.001589	0.1049417
INF	-0.0106355	0.028639	-0.37	0.710	-0.06677	0.0454955
_cons	-0.3914936	-3.88	0	-0.58929	-0.1937	

\*\*Level of significance at 1%, \* Level of significance at 5%

appropriate and applied to estimate the association among the variables (Gujarati, 2004). Random effect OLS regression analysis has been depicted in Table 5.

### **STATA-13 Result**

Table 5 describes the random effect OLS regression analysis that reflects the robustness of Wald chi test as “model of good fit” as  $p$ -value is significant at 1% level of significance ( $p < 0.000$ ). Overall  $R^2$  of the model is 48.9% that discloses that ROA is explained by 48.9% with size, GDP per capita, leverage, liquidity, and underwriting risk.

The test divulges that size of the company explains a positive and significant association at 1% with ROA as  $p < 0.00$ , and GDP per capita demonstrates a positive and significant at 5% with ROA as  $p < 0.05$ . Further, leverage and underwriting risk display a negative but significant association at 1% with ROA as  $p < 0.00$ , whereas liquidity displays a negative but significant association at 5% with ROA as  $p < 0.05$ .  $H_0$  is rejected in all these cases.

Although asset growth rate and market share show a positive association with ROA, these variables do not significantly influence the later. Similarly, the volume of capital and inflation demonstrate a negative

association with ROA, but these factors have no level of significance with the later.

The regression results clearly reveal the association between most of the internal and macroeconomic factors with financial performance. The financial performance of the insurers depends on the increase of the size of firms by increasing the number of branches resulting in cost reduction coupled with the accelerated sales volume of the insurance business.

GDP per capita explains the per capita income of people of the country, which in turn improves the financial performance of the insurers. As the risk saver of people and properties, the insurance companies bear the risk by underwriting, which empowers the firm to bear the insured's claims due to unforeseeable events.

Thus, an increase of underwriting risk by indemnifying insurance policies reduces the financial performance of the insurers. This implies that financial performance can be improved by reinsuring surplus risk to big insurance players. Although more inclusion of debt capital is paving the way towards achieving financial leverage by way of tax advantage and lower cost of debt, it invites default risk to the business that reduces the chance of financial performance of insurance companies. Hence, lesser dependence on

debt reduces the cost of debt capital and consequently reduces the default risk, which in turn accelerates the financial performance of insurance companies.

The result of the size of insurance companies is consistent with Almajali et al. (2012) and Eling and Marek (2012), but these researchers have given an opposing view on leverage and liquidity. Saeed and Khurram (2015) have given an opposing view on the size of the company and liquidity.

The result of GDP per capita is consistent with Hailegebreal (2016), whereas Haiss and Sümegi (2009) and Chen-Ying (2014) have given opposing views. The result of underwriting risk is supported by the findings observed by Joseph et al. (2013), Conard and Plotkin, (1968) who observed that the decrease in underwriting risk has the effect of increasing ROA. Fiegenbaum and Thomas (1988) have posited the opposite view that there is a linear relationship between financial performance and risk. Adequate availability of cash leads to absolute liquidity that lessens the opportunity of investments, which in turn deprives the insurers to earn an adequate return on investment. In other words, the financial performance of insurance companies can be enhanced by deploying cash generated from premium earned in more return-fetching investments. The result of liquidity is not supported by Ahmed et al. (2011), who had noted that liquidity is insignificant with ROA.

## Conclusion

The results throw light on the managers to strategize the operation of an insurance business to improve the returns of assets of the firms in view of unpredictable windfall claims. The study reveals that a positive correlation exists between the returns of assets and size of the firms, asset growth rate, market share, and GDP per capita. Underwriting risk is inversely correlated with financial performance. The multicollinearity statistics reveal that there is no presence of multicollinearity among the independent variables, which becomes appropriate to apply random effect OLS regression model after administering Hausman's test.

Random effect OLS regression model proves to be the model of good fit in this study. The financial performance is explained by 48.9% of independent variables taken for the analysis. The financial performance of insurance companies is dependent on spreading more number of

branches and increased per capita income of the people of the country. Further, the reduction of underwriting risk through reinsurance lowers the quantum of debt capital in the capital structure of the companies, and the placement of premium earned in return-fetching investments would enhance the financial performance of the insurance companies.

Thus, the learned managers constantly strive to remain profitable and become cost-efficient through economies of scale and maximize revenue generation by collecting premium with an intent to render round the clock financial services to the insured. This action would entail the insurance companies to become financially sustainable in the long run while maintaining a fiduciary obligation to the society, communities, and nation.

However, the study suffers from certain limitations. The overall  $R^2$  explains that the financial performance of the insurance companies is also explained at 51.1% by other indigenous and exogenous variables not taken in this analysis. The future research should take in to account other firm's internal factors like age of the company, loss ratio, retention ratio, premium growth rate, and other macro factors such as interest rate, exchange rate, and current account deficit, which might affect the returns of assets of insurance companies. The research has thrown insight to the policymakers and regulators who would revise the insurance policies and regulations in fixing reasonable premium rate and suggest a framework for quick disbursement of insurance claims for the larger interest of the community as a part of social obligation while remaining profitable.

## Recommendation

The outcomes of the research put forward plethora of suggestions to the policymakers, investors, and managers. In view of the evolution of per capita income of the people, the insurance companies should thrust upon horizontal growth by spreading the branches across the country to reap the advantages of accelerated business volume and cost efficiencies. The growth of the branch number increases the insurance business, which in turn increases the underwriting risk. To be profitable, the insurance companies should absorb minimum risk and reinsure the surplus by transferring to the shoulder of giant insurers. Further, the insurers should try to achieve an optimal combination of debt



and equity by minimizing the cost of debt capital and consequent default risk, which could enhance their financial performance.

Additionally, the companies should aim at generating more internally generated sources by ploughing back profit and inject more equity capital into the business. Free cash flow from premium earned should be deployed in various avenues of investments like shares, bonds in the emerging stock market economies, real estate, and so forth to gear up the financial performance of insurance companies.

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