



## Degree of Financial and Operating Leverage and Profitability of Insurance Firms in Ghana

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### Abstract

The profitability of any business entity for a particular time period can be conceptualized as the final outcome of its investing and operating activities. This paper investigated how profitability of insurance firms in Ghana, is influenced by working capital management and leverage using 18 firms. The current ratio was taken as representative of the result of working capital management policy and financial leverage and operating leverage as the bench mark for capital structure. Supplementary analysis was also undertaken to assess the impact of premium growth, GDP and firm size on profitability. Panel data methodology was used to determine whether profitability of insurance companies is related to selected indicators in accordance with the accepted finance theory. Furthermore, the research results found that, degree of financial leverage and liquidity are inversely related to profitability while operating leverage is positively related to profitability.

**Key words:** Profitability; Working capital management; Operating and financial leverage

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### INTRODUCTION

An effective working capital management is important for corporate managers and creditors as it determines how the firm manages risk to avoid bankruptcy. In recent times insurance companies have realised the need to formulate proper working capital management policies to remain robust especially in the face of mounting demand for the payment of claims (Abid & Mseddi, 2004). Considering the strong increase in operating risk worldwide and the growing pressure on insurance institutions (Naveed *et al.*, 2010), it seems prudent to pay attention to the financial health of these companies by focusing on good working capital management.

To effectively manage liquidity and solvency, the management of corporate institutions would have to decide on the optimum level of both current assets and current liabilities that should be kept by management at a particular point in time. In the current study, the liquidity, capital structure, macroeconomic indicators and other firm specific characteristics of the insurance firms has been used since it is a comprehensive ratio which captures the relationship between the level of current assets and current liabilities (Zubairi, 2013). It is usually referred to as the current ratio, calculated as current assets / current liabilities.

According to Watson and Head (2010), degree of operating leverage provides a vivid explanation of the extent to which an organization relies on fixed costs in its quest for maximizing its operating profit. It should be noted that, an increase in profits is as a result of controlling the fixed cost components of the company such that the total revenue covers a higher margin than the fixed cost of the product. That is, when degree of operating leverage continuous to increase, there is the likelihood of an equal proportional increase in the fixed

operating cost of the company which has the propensity of decreasing the margin of the operating profit of the organisation in the long run.

In effect if the variable cost component is predominant among the operating cost of the organisation then there is also the likelihood that the operating leverage of the company will decline and a comparable effect can be envisaged on the net profit for a company with a high degree of financial leverage. In view of this Zubairi (2013) noted that “it makes such companies more risky because if the level of income is not sufficiently high, the fixed operating costs may not be adequately covered, thereby resulting in an operating loss or a low operating profit. Thus, while a high degree of operating leverage will increase financial performance in times of rising sales or inflow of income; operating profits will reduce rapidly when sales are showing a declining trend”.

From this backdrop, an insurance company having high fixed cost as percentage of its total costs coupled with a high financial leverage, will expose policy holders to the risk that they might not be able to indemnified when the unfortunate event occurs. It is therefore important to pragmatically forecast future premiums, if risk is to be contained. If premium receipts are not sufficiently high to adequately cover fixed costs, operating profit may be so low that fixed interest charges are not covered (Naveed *et al.*, 2010).

Unlike operating leverage, in the case of financial leverage the fixed cost is the financial charges and its effect is on earnings before tax. Degree of financial leverage is higher in those companies which operate with large amount of debt capital since Abor (2008), established that, insurance companies are largely leveraged the expectation in this study is to attain a higher financial leverage for insurance companies in Ghana as well. This implies that the degree of financial leverage of insurance companies will reduce if the companies decide to operate with less amount of debt capital. This invariably means that all equity firms will not be leveraged.

Empirical analysis indicates that firm level characteristics such as firm size, premium growth age of the firm, riskiness of the firm and macroeconomic variables such as Lending rate, exchange rate and GDP may possibly influence an insurance company’s financial performance, capital structure and degree of leverage (Abor, 2008; Amidu, 2007). But these empirical relationships were not established without a theoretical basis. In view of that, the current study considers the pecking order theory, static trade off theory as well as the signalling theory to establish the conclusions of the study. The empirical findings of the study are based on panel data of insurance companies with its complete sets of accounts with the National Insurance Commission for the years 2002 to 2011.

The core objectives of the study are two folds: First, to estimate whether firm specific variables as

well as macro economic variables exhibit a statistically significant association with financial performance of insurance institutions in Ghana. Second, to ascertain whether insurance companies have some distinct working capital management traits which are different from other industries and vary from the generally accepted theory?

## 1. HYPOTHESIS

(1)  $H_0$ : The degree of financial leverage has no significant impact on profitability.

$H_1$ : The degree of financial leverage has a significant impact on profitability.

(2)  $H_0$ : There is no association between degree of operating leverage and profitability.

$H_1$ : There is an association between degree of operating leverage and profitability.

(3)  $H_0$ : There is no association between the liquidity and profitability.

$H_1$ : There is an association between the liquidity and profitability.

(4)  $H_0$ : The exchange rate, GDP and lending rate has no significant impact on profitability.

$H_1$ : The exchange rate, GDP and lending rate has a significant impact on profitability.

## 2. A REVIEW OF THE LITERATURE

According to Ahmadinia, Afrasiabishani, and Hesami (2012), the static trade-off theory projects how a firm’s optimal debt ratio is determined by a swap between the benefits and obligations of borrowing, holding the firm’s assets and investment plans constant. The target debt-equity ratio is estimated through a cost-benefit analysis of different levels of debt. The Pecking Order Theory on the other hand, explains the order in which a company’s capital can be sourced and avoid dilution of control as well as increment in the cost of capital of the company. For that matter, companies would give first preference to the use of internal funds or retained earnings for meeting the financing requirements of their investment projects. They would next go for debt financing in case the internal sources are insufficient and as a last option external financing through a new equity issue would be used.

Thus pecking order theory implies that financial oriented companies would not opt for debt financing for their new projects because of the availability of sizable amounts of internal funds. However, as per static trade off, financially sound companies would give preference to the use of debt financing in view of the attraction of tax shield benefit available on borrowed funds. Thus, the static trade-off theory predicts that there would be a direct relationship between profitability and leverage, while the pecking order theory expects an inverse relationship between them. Moreover, the static trade-

off theory argument is that larger size companies have a higher preference for debt financing because of a lower probability of bankruptcy. In support of this is the assumption that large firms being more diversified, are less likely to go bankrupt (Amidu, 2007).

From the empirical perspective of the working capital and the other variables used in the study, other researchers have found that there is an exchange of the goals of working capital management, profitability and liquidity of various industries such that strategies for the working capital management may significantly impact on both the liquidity of the company as well as the profitability of the company (Shin & Soenen, 1998). Shin and Soenen (1998) further analyzed that typology should not be assessed exclusively in terms of liquidity. Finally, as profitability and liquidity are, in the long term, related to the solvency of the company, a more complete assessment of the typology should involve three dimensions profitability, liquidity and solvency. But this study did not consider a wider spectrum of firm specific variables which the current study sought to establish.

Mseddi and Abid (2004), employed the panel data methodology to compute the degree of operating leverage and the degree of financial leverage for firm in USA for a period of five years and explored the association between the risky nature of the firms and the relative value. The study identified a positive effect on company value of both operating and financial leverage meaning that with the surge in the various degrees of leverage of the firms in USA the value of the company also increases which is obvious because of the benefit debt as a capital. The researchers also proved that, the excess return is a positive and increasing function of operating leverage, degree of financial leverage and systematic risk for sample firms that show a positive correlation of sales changes with market portfolio returns.

In a related study, Eljelly and Abuzar (2004) sampled Saudi Arabian companies who are in the major business sectors and studied the association of profitability with liquidity covering a period of five years again and found that there is a significant negative association between firm profitability and liquidity was established, while company size and profitability establishing a positive strong relationship. Liquidity and firm size which formed the controlling variables in the study were found to have a higher influence on the profitability of capital intensive industrial sector firms as compared to their effect on service sector organizations. Even though the service sector was considered in their work there was the lack of the financial institutions as well.

Zubairi (2010), investigated how profitability of firms, in the automobile sector of Pakistan, is influenced by working capital management and capital structure of firms. The paper used current ratio as representative of the result of working capital management policy and financial leverage as the bench mark for capital

structure. Supplementary analysis was also undertaken to assess the impact of operating leverage and firm size on profitability but their study did not factor in the effect of some macroeconomic variable which is considered by the current study. Even though the study used pooled data analysis, to indicate whether profitability of automobile firms is related to selected indicators in accordance with the generally accepted finance theory there is insufficient evidence using the panel data methodology from the perspective of financial institutions hence the reason for the current study.

To consider the insurance sector, Guimaraes and Nossa (2010) studied on the health sector of Brazil with the focus of analysing the adequacy of the normative model of working capital management in terms of profitability, liquidity and solvency. But the study used the analysis of variance (ANOVA) to establish the association and since researchers have indicated that correlation and regression analysis better establishes a relationship and effect between two variables, the current study seek to do that and further analyse the results through macroeconomics factors as well as established capital structure theories instead of the normative theory.

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### 3. METHODOLOGY

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This section discusses the sample size; population and research design used for the study. The sources of data for this study came from a number of secondary sources, mostly the data base of the National Insurance Commission, and the Ghana statistical service on the insurance sector with extensive use of the annual reports and financial statements of the insurance companies. The data was grouped into a coherent dataset in order to perform statistical analysis with *Eview 7*.

While the total population of insurance companies in Ghana is estimated around 42, 18 of them were randomly selected based on the ages of the firms. This is because Abor (2008) opined that the older a firm, the more relevant their data.

#### 3.1 Variables and Measurement

This study used eleven main constructs, namely, profitability, liquidity, degree of operating leverage, degree of financial leverage, revenue growth, GDP, Exchange rate, lending rate, short term debt ratio long term debt and total debt ratio.

#### 3.2 Profitability

Profitability is a relative measure of the financial efficiency of the business. For the purpose of the current study profitability is taken as the return on equity (ROE) which is measured as earnings before interest and taxes (EBIT) divided by total equity of the insurance companies and used it as a dependent variable in the panel regression analysis to investigate the relationship of the other variables in the study.

### 3.3 Liquidity

Liquidity is essential for insurance companies as insufficient liquidity means delays in honouring obligations with regards to the settlement of claims by insurance policy holder (Naveed *et al.*, 2011). For the purpose of the current study, the researchers measured liquidity as the proportion of current asset as a ratio to the current liabilities of the insurance companies. But since insurance companies are into repayment of claims and receipt of premiums, their current liabilities is made up of unpaid claims which are due whilst the current assets comprises premiums due from policyholder but not yet paid. This in the view of the researchers will provide an over view of the working capital management of the insurance companies hence liquidity is used in this research as a proxy for working capital management.

### 3.4 Degree of Operational Leverage

Degree of operating leverage according Zubairi (2010), point out that the degree to which a company's operating costs are fixed. A higher proportion of fixed costs imply a higher operating leverage and a lower proportion of fixed cost indicates a lower operating leverage. The degree of operating leverage (DOL) is measured as the ratio of contribution margin to earnings before interest (EBI). Another measure of degree of operating leverage according to Guimarães and Nossa (2010) is the ratio of percentage change in earnings before interest and tax (EBIT) to percentage change in the premiums received. For this study the measurement by Guimarães and Nossa (2010) is adopted because it is more direct to the nature of the study.

### 3.5 Degree of Financial Leverage

A company is described as leveraged if it is financed partly through debt simply because of the tax shield element of debt. But debt carries a fixed cost, which means that if the company increases its debt the degree of financial leverage also increases. Based on previous literature, financial leverage of a company may be computed in different ways but for the purpose of the current studies used the ratio of earnings before taxes (EBT) to earnings before interest and taxes (EBIT) for calculating degree of financial leverage (DFL). This mode of computation has been adopted because it focuses directly on the impact of interest on income before taxes.

### 3.6 GDP

Gross domestic product is the total value of goods and service produced by an economy by its nationals for a given period of time. For that matter, it's relevant when establishing a relationship which factors in the performance. For the purpose of the study, since a relationship is to be established the logarithms of the raw figures were found to make it linear.

### 3.7 Revenue Growth

The relationship between premium growth and profitability can also be explained by pecking order hypothesis. Growing firms place a greater demand on the internally generated funds of the firm (Abor, 2005). Myers (1984) argues that firms with high growth will capture relatively higher debt ratios. He further stated that, there is also a relationship between the degree of previous growth and future growth. Premium growth is estimated as Current Premium – Previous Premium.

### 3.8 Lending Rate

Lending rate is a term applied in many countries to reference an interest rate used by banks. The term originally indicated the rate of interest at which banks lent to favoured customers, those with good credit, though this is no longer always the case. Some variable interest rates may be expressed as a percentage above or below prime rate. But because lending rate is associated with degree of operating leverage.

### 3.9 Exchange Rate

An exchange rate between two currencies is the rate at which one currency will be exchanged for another. It is also regarded as the value of one country's currency in terms of another currency. Therefore, since exchange rate has impact on the performance of financial institutions, it is relevant to use it as a dependent variable. For that matter, the current researcher used the Ghana cedis to United State Dollar because it is an international currency used in Ghana.

### 3.10 Short Term Debt Ratio

This ratio is defined as the ratio of short-term debt to total capital. It is considered to measure the extent to which the insurance companies under study use short –term debt to finance their operations and how this category of debt associates with the firm's profitability for the chosen period of the study.

### 3.11 Long Term Debt Ratio

This is the ratio of long-term debt to total capital. It measures the extent to which insurance companies use long-term debt to finance their operations and how this category of debts associates with the firm's profitability for the chosen period of the study.

### 3.12 Total Term Debt Ratio

This is the ratio of total liabilities to total capital. Basically it is the summation of short term debt and long term debt of the firms to their total capital. This ratio measures the extent to which the operations of the firms have been funded with total debt relative to equity and also to see how leverage associates with insurance companies' financial performance in Ghana. Many studies have been conducted to determine the relationships between leverage and profitability showed a positive association.



### 3.13 Estimation of the Model

The panel regression is used to establish the relationship between the variables explained above the panel data methodology is appropriate because of the cross-sectional and time series nature of the data used in the study. In pooled regression or constant coefficient model, intercepts and slopes are taken to be constant. Assuming the absence of any significant cross sectional or inter temporal effects, the cross sectional firm data and time series data are pooled together under a single column. Specifically, the econometric model is defined as follows;

$$PF = \beta_0 + \beta_1(GDP)_{i,t} + \beta_2(FS)_{i,t} + \beta_3(LQ)_{i,t} + \beta_4(DOL)_{i,t} + \beta_5(DFL)_{i,t} + \beta_6(RG)_{i,t} + \beta_7(LR)_{i,t} + \beta_8(EX)_{i,t} + \beta_9(STD)_{i,t} + \beta_{10}(LTD)_{i,t} + \beta_{11}(TD)_{i,t} + \epsilon$$

Where

- PF = Profitability
  - LR = Lending rate
  - GDP = Gross Domestic Product
  - EX = Exchange rate
  - FS = Firm size
  - STD = Short term debt ratio
  - DOL = Degree of Operating Leverage
  - LTD = Long term debt ratio
  - DFL = Degree of Financial Leverage
  - TD = Total term debt ratio
  - RG = Revenue Growth
  - LQ = Liquidity measured by Current Ratio
  - $\epsilon$  = The error term with zero mean and constant variance
- The possible expected effects of the said variables on firm's profitability are reported in Table 1.

**Table 1**  
**Expected Relationship**

Variable	Measure	Expected Relationship with Leverage
GDP	Log GDP	Positive
Firm size	Log of premium	Positive
Degree of Operating leverage	%change in EBIT/ % Change in sales	Negative
Degree of Financial leverage	EBIT/EBIT	Positive
Premium Growth	$\frac{\text{Current Premium} - \text{Previous premium}}{\text{Previous premium}}$	Negative/Positive
Liquidity	Current Assets/ Current Liabilities	Positive
Lending rate	Raw percentage	Negative
Exchange rate	Ghana cedi to the US Dollar	Negative
Short term debt ratio	$\frac{\text{Total short term debt}}{\text{Total capital}}$	
Long term debt ratio	$\frac{\text{Total long term debt}}{\text{Total capital}}$	Negative
Total debt ratio	$\frac{\text{Total debt}}{\text{Total capital}}$	Negative

## 4. RESULTS AND DISCUSSION

This section presents the descriptive statistics, correlation and the regression analysis for the study. The discussion of the empirical findings is also reported in this section.

Table 2, descriptive statistics shows the information at the level of the variables. From the table, degree of financial leverage has a lower mean value and is less volatile as compared to operating leverage. Again the two leverage ratios also vary in the skewness as degree of financial leverage indicated a negative coefficient while degree of operating leverage showed a positive coefficient. The import of this is that, the average of the DFL is appropriately measured with the median while that of DOL is the mean.

It can be deduced from the table that the firm size, profitability and premium growth follows almost a normal distribution. Again from the firm specific variable perspective, short term debt (STD) and total debt ratio (TD) showed a higher average indicating that, the debt level of the insurance in Ghana is very high. This finding confirms the earlier result on the degree of financial leverage and operating leverage. On the side of the macroeconomics, the average lending rate of the economy of Ghana was 14.03% which is on a higher side and this is due to the constant change in the inflation rate of Ghana. The exchange rate on the other hand indicated an average of GHS 1.1232 to the USA Dollar which is volatile and does not auger well in the development of foreign exchange risk polices in Ghana as it has the likelihood of reducing the financial performance of the insurance companies.

**Table 2**  
**Descriptive Statistics**

Variables	Mean	Std. Deviation	Skewness	Kurtosis
PF	29.7040	15.89995	3.633	4.351
LTD	13.6099	15.77096	7.866	6.122
STD	53.8137	19.70944	-.255	-.675
TD	62.5985	16.54383	-.191	.586
DFL	49.8230	17.67626	-.148	-.861
LQ	2.1406	6.32721	6.785	8.645
DOL	57.5598	15.13949	-.277	-.589
FS	7.1780	.61884	1.619	9.442
LR	14.0330	4.37390	.720	-.019
GDP	6.7368	2.53757	1.897	2.751
ER	1.1232	.33818	1.346	.620
PG	19.25	19.15	1.234	.436

Source; Descriptive Statistics, 2013

Again, it is indicative from Table 2, the average for the liquidity of the insurance companies is not volatile meaning that, the working capital management which was measured by liquidity can be entirely relied upon since it may be more or less than what has been shown in the descriptive studies. That notwithstanding, firm size recorded the least volatility with its mean of about 7.178. It is also relevant to mention that, profitability of the insurance companies is impressive.

This stems from the fact that, the mean for the profitability is 29.7040 percent. The import of this is that, in the insurance sector of Ghana some of the companies make extremely high profit while some also make very low profits. Implying that the age difference of the companies might be a major factor since those who which got established earlier would have capture more policy holders than those which have been established currently.

**Table 3**  
**Correlation Matrix**

	PF	LTD	STD	TD	DFL	LQ	DOL	FS	LR	PG	GDP	ER
PF	1											
LTD	.712**	1										
STD	-.047	-.085	1									
TD	-.082	-.070	.761**	1								
DFL	-.235**	-.142	.094	.090	1							
LQ	-.101**	-.099	.191*	.146	-.083	1						
DOL	.132**	-.121	.141	.099	.691**	.258**	1					
FS	.036	.028	-.072	.009	.036	-.034	.067	1				
LR	.099	.169	.077	.030	-.065	-.054	-.041	-.111	1			
PG	.201*	-.240**	.167	.111	.252**	-.040	.083	-.061	-.131	1		
GDP	.010	-.155	-.091	-.051	.016	-.018	.044	.098	-.434**	.087	1	
ER	-.038	-.141	-.078	-.016	-.155	-.083	-.213*	.148	-.486**	.101	.744**	1

Source: Financial statement of insurance companies, 2013. \*\*Sig at 1% \*Sig at 5%

Correlation establishes the relationships that exist between the variables used in the study. From Table 3, short term debt ratio, total debt ratio, degree of financial leverage, exchange rate and the liquidity of the firms show a negative relationship with the profitability of the firms. Apart from these variables, firm size, GDP, premium growth, lending rate and the degree of operating leverage

provided a positive outcome. These relationships were expected because in the case of firm size and premium growth, the higher they increase the profitability would also increase since they are more or less the basis upon which most insurance companies derive their operating efficiency. With respect to the relationship of degree of operating leverage and GDP the import of the relationship

established is that, Gross domestic product of Ghana increase in line with an increase in the profitability of the insurance companies of Ghana simply because the insurance sector is part of the service sector which contributes to about 50% of the GDP of Ghana.

#### 4.1 Co-Integration Test

Since a linear relationship is supposed to have been established that there is the need to test the co integration between the variables to establish whether all the variables are stationary within the period understudies.

**Table 4**  
**Kao Residual Co-Integration Test**

			t-Statistic	Prob.
ADF			-3.967383	0.0000
Residual variance			6.234366	
HAC variance			4.532227	
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(RESID)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-1.663749	0.190796	-8.720046	0.0000
D(RESID(-1))	0.592690	0.138756	4.271445	0.0000
R-squared	0.603966	Mean dependent var		0.889514
Adjusted R-squared	0.538924	S.D. dependent var		2.870684
S.E. of regression	2.567359	Akaike info criterion		4.456759
Sum squared resid	12.78016	Schwarz criterion		4.235006
Durbin-Watson stat	1.79409	Hannan-Quinn criter.		3.870520

Source; Co-integration test, 2013

The ADF test results give a strong evidence to reject the null hypothesis that the estimated residual has a unit root. This implies that the residuals are stationary. It means that the mean and variance of the residuals do not vary with time.

#### 4.2 Regression Results

From Table 5, the R-square recorded is approximately 55.8%. This implies that about 55.8% of the variation in profitability of the insurance firms in Ghana is mutually determined by the eleven variables used in the study. The Durbin-Watson statistic which is 1.67 also implies that, there is an evidence to accept the null hypothesis that there is no autocorrelation problem in the estimated model. This can further be verified from Table 3 which established the correlation between the variable.

With regards to the variables used in the regression, the empirical result shows that the insurance companies' profitability is negatively significantly associated with the degree of financial leverage. The P-value of 0.021 from Table 5 implies that the null hypothesis for the first hypothesis is accepted at 1 percent level of significance. A one percent increase in financial leverage leads to about 0.234 percent decline in profitability, as the estimated coefficient of the degree of financial leverage

is about -0.234. This evidence is consistent with the Pecking Order Theory, which postulates a negative correlation between the profitability and the degree of the financial leverage. Myers (1984) and Myers and Majluf (1984) but it contrast the empirical evidence by Zubairi (2010) simply because his study was carried on a middle east country which has a different national culture when it comes to patronising insurance product than Ghana which is an African Country.

The table also reveals that there is a statistically significant and positive association between the profitability of the insurance sector and financial leverage. On the basis of P-value of 0.0154 this study rejects the null hypothesis that the degree of operating leverage has no relationship on the profitability of insurance companies in Ghana because it is lower than the bench mark alpha of 0.05. It is therefore relevant to indicate that the relationship established is a positive one. Which implies that, whenever insurance companies increases the degree of operating leverage, they are faced with the situation of having to increase their profit through the tax shield benefit of debt capital which is in line with the Static Trade-off Theory that states that more profitable firms have lower expected bankruptcy costs and higher tax benefits (Jensen, 1986; Larry *et al.*, 1995).

**Table 5**  
**Regression Result**

	Coefficients	T-test	Sig
(Constant)	-0.578	-3.035	.002
LTD	.701	10.350	.000
STD	-.117	2.148	.022
TD	-.089	-2.892	.003
DFL	-.234	-2.343	.021
LQ	-.090	-2.227	.010
DOL	.097	1.939	.025
FS	.020	.308	.758
LR	-.006	-2.075	.011
GDP	.198	1.994	.035
ER	-.106	-3.970	.001
PG	.001	-.018	.985
R	R Square	Adjusted R Square	Durbin-Watson
.747 <sup>a</sup>	.558	.513	1.652

Source: Regression results

This implies that the insurance sector firms in Ghana prefer to use more debt as compared to equity in their financial structure. The probable explanation for the positive signs of linkage of profitability to financial leverage is that during the later part of the years under review, most of the insurance companies were expanding their service packages. However, insurance demand witnessed a downward trend recording a penetration rate of 1% (National Insurance Commission Report, 2012) mainly due to slowdown in economic growth and debt financing becoming expensive due to rising interest rates in Ghana by the financial institutions.

Thus, the increased fixed operating cost was spread over a relatively large number of years due to decline in the ability to generate premiums, thereby resulting in a positive relationship between profitability and operating leverage. Despite this, financial leverage and profitability had a negative relationship, indicating that insurance firms continue to enjoy such small profit margins. And that insurance firms using higher proportion of debt in their capital structure were still more profitable than firms using lower proportion of debt due to the tax shield component of debt capital.

Furthermore from Table 5, exchange rate and lending rate which is part of the macroeconomic variables of the study were all significant at 5% indicating that the null hypothesis that there is no relationship between these variables and profitability of the insurance companies is rejected in the sense that, the relationship established by the study is a negative one which are statistically significant. This implies that, for insurance companies in Ghana to benefit from lending rate policies and

exchange rate risk policies, they would have to engage in reinsurance in an insurance companies which operate an economy whose macroeconomic variables does not fluctuate like in the case of Ghana so as to mitigate the risk they will be exposed to.

Again, one significant finding in the regression result is that the profitability of the insurance sector is positively and significantly related to the size of the firms. It is conspicuous that the variable with the highest coefficient was that of the long term debt ratio which recorded a coefficient of 0.701 meaning that, a one percentage increase in the premiums of the insurance firms leads to almost 70.1 percent growth in the profitability of the firms because whenever premiums are collected without adequate claims by clients reflect in the level of profitability which is attained by the insurance companies. Large size companies are usually diversified and therefore less likely to go bankrupt it can be concluded that there firm size is inversely related to bankruptcy and thus directly related to profitability. The significance of the coefficient of the size variable suggests that the firms in insurance sector increase their profitability by increasing their premium collection, either by enhancing the penetration rate or the devising insurance products to already existing policyholders.

GDP and premium growth also revealed a statistically significant positive relationship with profitability but GDP indicated a much higher coefficient than premium growth. Meaning that whenever the general economic growth of the economy of Ghana is increased, it adds more to the profitability of the insurance companies than the premium growth as more people would have more in their possession in terms of savings therefore they can afford to subscribe to an insurance product which will effectively increase the penetration rate and for that matter, the profitability of the insurance companies of Ghana. The result is consistent with the study by Abor (2005) simply because his study was also conducted on the economy of Ghana.

Finally, profitability is observed to be negatively associated with liquidity. The estimated magnitude is 0.010 that is statistically significant at 5 percent level of significance. However, this finding seems to be due to the peculiar circumstances of the insurance sector, where the insurance market has been prevailing for a number of years, due to these insurance companies routinely pay claims within the year before cash are advances to them in terms of premium collection from other policy holders, thereby significantly reducing their liquidity. This suggests that for profitability growth, it is necessary to reduce the current assets as compared to current liabilities (as the liquidity is measured by the ratio of current assets to current liabilities). The level of profitability can be enhanced by adopting an active and effective liquidity management strategy.



## CONCLUSIONS AND POLICY IMPLICATIONS

The study used sample data of 18 insurance companies out of the 42 in the insurance sector because companies which have their financial statements with the National Insurance Commission presently were only eighteen. The data used covered the period 2002 to 2011. We have thus gathered strong evidence to show that: Financial leverage has a significant negative effect on the profitability of the insurance companies; Operating leverage has a positive and statically significant influence on profitability; The growth of profitability is positively associated with the size of the firm, premium growth and GDP and an increase in the liquidity of insurance companies leads to an increase in firm profitability. Also exchange rate and lending rate are found to negatively influence the performance of the insurance companies in Ghana.

The results relating to the degree of financial and operating leverage were consistent with the pecking order theory and the static trade-off theory. From the result, in order for insurance companies to increase profitability, they should reduce financial leverage and liquidity and develop efficient strategies to increase operating leverage, firm size, and premium growth and take advantage of the GDP growth in their economies and be more conscious with the.

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