

## DETERMINANTS OF INSURANCE COMPANIES PROFITABILITY: AN ANALYSIS OF INSURANCE SECTOR OF PAKISTAN

**Hifza Malik**

Department of Management Sciences,  
COMSATS Institute of Information  
Technology Abbottabad Campus,  
PAKISTAN

[Hifzamalik86@gmail.com](mailto:Hifzamalik86@gmail.com)

### ABSTRACT

*Insurance services are now being integrated into wider financial industry and the insurance sector plays an important role in service based economy of Pakistan. Profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner's wealth and profitability is very important determinants of performance. This paper investigated the determinants of profitability in insurance companies of Pakistan. Specifically this examine the effects of firm specific factors (age of company, size of company, volume of capital, leverage ratio and loss ratio) on profitability proxied by ROA. A key indicator of insurance companies profitability is return on assets (ROA), defined as the before tax profit divide by total assets (TA). Profitability is dependant variable while age of company, size of company, volume of capital, leverage and loss ratio) are independent variables. The sample in this study includes 35 listed life and non-life insurance companies which cover the period of 2005-2009. Secondary data obtained from the financial statements (Balance sheet and Profit/Loss account) of insurance companies, financial publications of State Bank of Pakistan and Insurance Year Book that is published by Insurance association of Pakistan (IAP). The findings show that there is no relationship between profitability and age of the company and there is significantly positive association between size of the company and profitability. The result also shows that the volume of capital is significantly and positively related to profitability. Loss ratio and leverage ratio showed negative but significant relationship with profitability.*

*Keywords: profitability, determinants, insurance.*

### INTRODUCTION

The insurance sector plays an important role in the service-based economy and its services are now being integrated into wider financial industry. In Pakistan insurance companies act as financial intermediaries. Insurance companies (both private and public) consisting the organizations which provides life, fire, accident, causality and many other forms of insurance. Pakistan's Financial Sector has shown strong resilience to a challenging macroeconomic environment and global developments. The size of the country's financial sector, which includes Banks, Non-Bank Financial Institutions (NBFIs), Microfinance banks, Central Depository of National Savings (CDNS), the Insurance sector, and financial markets, in terms of assets, has increased to Rs 8.2 trillion by end-June 2009 from Rs 7.1 trillion at end December 2007. The report summarizes the developments in 2008 and the first of half of 2009 (State Bank's Financial Stability Review 2008-09).

Insurance sector continues on its sluggish pace of growth and gradually increasing penetration of insurance services. The insurance industry has enjoyed robust growth in the last few years, driven by favorable economic conditions, expansion of the financial sector as a whole, privatization of large state-owned entities and foreign investments. Generally, the firm's performance can be estimated by

measuring the firm's profitability, and Insurer's performance is related to such potential determinants as company's size, loss ratio, investment ratio, capital structure, and the growth of written insurance premiums past performance. Institutional and political environments also play vital role besides firm-specific factors of firm behavior.

This paper provides the internal factor analysis to identify the determinants of profitability for insurance sector in Pakistan. 34 listed companies selected for research. Profitability is dependent variable and age, size of companies; leverage ratio, loss ratio and volume of capital assets have been taken as independent variables.

Second section provides the literature on determinants of insurance sector's profitability

Preceding sections provides the objectives of research, the data collected and methodology that will be used to conduct this paper.

## LITERATURE REVIEW

It is not surprising that insurance industry is highly regulated and monitored because in society insurance serves as essential purpose. In state insurance companies perform a various activities to make sure that insurance consumers have access to insurance and treated fairly by insurer and their agents, and that insurance companies are financially practicable (McCarran Ferguson Act 1945). Historically the forms of insurance regulations include laws related to the formation, operations of insurer, and terms of insurance contract and licensing. These laws also include surplus and minimum capital requirements restrictions on the investment on statutory reserves and prescribed methods for calculation of reserves (Mayers and Smith, 1988).

During 1980 the profitability of insurance companies varied across different a legal and regulatory measure that reveals that these environments were supposed to protect the insurance contract that may have had reverse effect if they created a significant constrained on the activities of the insurance companies (Born H. P., 2001). Agiobenebo and Ezirim examined the relationship between profitability and financial intermediation in Nigeria. Results showed that the level of premium to total assets is positively related to level of profitability of insurance companies and also significant. The factors of net potential, loan levels, investments were found positively related but insignificant (Agiobenebo & Ezirim, 2002).

There are many ways to measure profitability, which are return on invested capital (ROIC), return on equity (ROE) and return on assets (ROA) (Nguyen 2006). Life insurance companies used unique accounting system due to which profitability of the industry has always been difficult to measure as compared to other financial institutions. Profitability is affected by factors including the scale of policy holder's dividend, capital gain or losses and federal/state taxes for insurer (Wright 1992). Kashish & Kashram (1998) conducted study on Jordans' insurance industry and used profitability as dependent variable, where profitability was proxied by return on investment(ROI) by using this equation  $ROA = \text{net profits} / \text{total assets}$ .

Study of Vigaykumar and Kadirvelu (2004), age of firm is an important determinant of profitability. Older the firm the more will be the profitability due to experience and efficiency cost decreases. They found the positive relationship between firms' profitability and age of the firm.

Bates, Murray, Jagger and Cowling (2008) found that both age and size of the firm had positive and significant effect for enterprise investment scheme recipients: the highest the level of fixed assets formation, the older and larger the EIS company. Hutchison and Cox (2006) examined the relationship between financial leverage and return on equity for US banking industry. They found the negative relationship between bank capital and profitability except for the best performing banks.

Harrington (2005) examined that the relationship between leverage and profitability has been studied extensively to support the theories of capital structure. Panayotis, Delis & Athanasoglou (2008) argued

that banks with lower leverage will generally report higher ROA, but lower ROE. Since an analysis for ROE pay no attention to the risk associated with high leverage and financial leverage is often determined by regulation, ROA emerges as the key ratio for the evaluation of profitability. According to Yang, Lianga & Desheng (2008) the most common ratios used to evaluate operating performance are the loss ratios and the expense ratios. NYS insurance department simplified the definition of loss ratio as the percentage of total premium dollars which paid for claims on a particular type of long-term coverage. A study conducted in Thailand found that for non-life insurance important factors that affect ROA are size of capital fund, loss ratio and market power. Great market power does not increase profitability ( Financial Service Liberalization, Final Report February 28, 2006)

## STATEMENT OF THE PROBLEM

Profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner`s wealth and profitability is very important determinants of performance (Ngoyen 2006). During the period of 2005-2009 the annual reports of insurance corporations in Pakistan show large fluctuations in the profits. This variation of profits among insurance corporations suggests that firm-specific factors play crucial role in influencing insurance companies` profitability. It is therefore essential to identify what are 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 Pakistan.

Literature shows that most of the studies conducted on the banking sectors both commercial and Islamic and these focused on determinants of profitability. However few studies are conducted on the insurance sector. One study is to identify the factors that determine the profitability of life insurance corporations in UK and another study is to measure the profitability of auto insurance in United States.

For developing countries such as Pakistan only smaller group of studies who examined profitability of insurance companies, hence there is a need for such studies in insurance sector in developing countries. In addition these studies that assists in identification of the factors of profitability determinants also help to avoid losses.

## RESEARCH OBJECTIVES

The research objectives of this study are:

1. To identify the internal factors in insurance companies in Pakistan that affects the profitability.
2. To determine the relationship between the profitability and internal factors of insurance corporations.

## RESEARCH HYPOTHESES

This research work attempts to provide answers to the following null hypotheses

1. H1: There is a positive relationship between age and profitability of insurance companies in Pakistan.
2. H2: There is a positive relationship between company size and profitability of insurance companies in Pakistan.
3. H3: Any increase in volume of capital is positively affected the expansion of activities of insurance companies of Pakistan.
4. H4: There is a negative relationship between leverage and profitability for Pakistani insurance companies.
5. H5: There is a negative relationship between loss ratio and profitability of insurance company in Pakistan.

**RESEARCH METHODOLOGY**

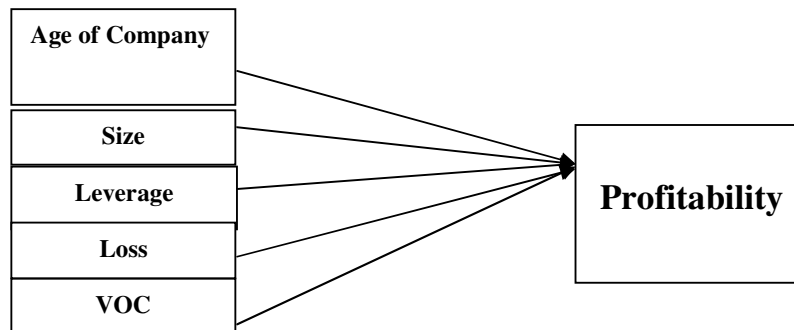
The multiple regression model is used to identify the relationship between the profitability of insurance companies and age of company, leverage ratio, loss ratio, company size and volume of capital. Data will be analyzed with one dependent variable (profitability) and five independent variables (age of companies, size of companies, leverage ratio, loss ratio and volume of capital). Following is the regression equation:

$$\Pi = \alpha + \beta_0 \text{Age} + \beta_1 \text{Size} + \beta_2 \text{Lev} + \beta_3 \text{Loss} + \beta_4 \text{Voc} + \epsilon$$

In above regression model all independent variables enter the equation at once to determine the relationship between the dependent variables and whole set of predictors. In this equation  $\Pi$  is the profitability in insurance companies (dependent variable) in this paper ROA (net income to total assets) will be used to measure profitability,  $\alpha$  is constant, the variable age of company will be measured from the number of years to date of establishments, company size will be measured by total assets in log value, leverage is leverage ratio this variable is proxied by the ratio of total debt to equity value of the company, the variable loss ratio will be proxied by the ratio of incurred claims to the earned premiums, voc is volume of capital and it is measured as the book value of equity so we will also use the book value equity as a measure of capital (total equity capital=book value of equity will be measured by the natural log of book value of equity) and  $\epsilon$  is error term.

**RESEARCH MODEL**

Profitability of Insurance companies is strongly affected by these factors.



**DATA ANALYSIS**

**The Descriptive Statistics**

**Table 1**

VARIABLES	MEAN	STANDARD DEVIATION
ROA	0.1332	0.111
AGE	23.64	9.966
SIZE	19.448	1.351
VOC	18.873	1.256
LEV	0.4884	0.203
LOSS	0.5522	0.253

Descriptive studies produced the mean, minimum, maximum and standard deviation for each variable for Pakistan insurance companies during 2005-2009. Based 4.1 the mean value of profitability (ROA) is 0.133 and the value of standard deviation is 0.111. The mean value of age is 23.64 there are big differences between values of age because of standard deviation is high at 9.966 years. The mean value of size is 19.45 the size is not variation across the sample firms with the standard deviation is

1.35. The mean value of volume of capital is 18.87 and there were moderate differences between the values of volume of capital because the standard deviation is 1.02. The mean value of leverage is 0.49 which indicates that leverage was high and there were big differences between the values of leverage across the sample firms because standard deviation was high 0.20. Finally the mean value of loss ratio is 0.55 and standard deviation is 0.25.

## Correlation

TABLE 2

VARIABLES	PEARSON CORRELATION	SIGNIFICANT
AGE	-0.035	0.734
SIZE	0.878	0.000
VOC	0.887	0.000
LEV	-0.571	0.000
LOSS	-0.592	0.000

Correlation shows that ROA is significant with size VOC, leverage and loss ratio. The analysis also shows that several independent variables are significantly correlated with each other. Size is correlated with voc leverage and loss. This observation shows that special attention should be given to possible multicollinearity problem when regression analysis is executed.

Table 4.2 shows that there is negative and insignificant relationship between age and ROA. Result shows that there is significant strong positive correlation between size and ROA with a significant value of 0.000. Volume of capital and ROA are strongly correlated with each other. And has positive and significant relationship. Leverage and ROA shows negative but significant correlation with each other. There is a significant and negative correlation between loss ratio and ROA.

## Regression Analysis

To determine the influence of important variables on dependant variable the result of regression model is presented in Table: 3

TABLE:3

Variables	Std. Error	Beta	T-Value	P-Value
(Constant)	0.115	1.024	9.047	0.000
AGE	0.000	-0.022	-0.496	0.621
SIZE	0.013	0.275	1.688	0.095
VOC	0.014	0.065	2.953	0.004
LEV	0.028	-0.094	-3.348	0.092
LOSS	0.024	-0.047	-1.074	0.052
<b>R-Squared</b>			0.898	
<b>Adjusted R-Squared</b>			0.807	
<b>F-Statistics</b>			95.121	
<b>Prob(F-Statistics)</b>			0.000	

Results show that profitability, age, leverage and loss ratio are negatively related with profitability. Volume of capital and size are positively related with profitability. R-square shows that only 89% of variations in dependant variable (ROA) are explained by the variations in the five independent variables. The adjusted R-square is slightly below the R-square with the value of 80%. F-statistics shows the validity of model as its value 95.121 is well above its Prob (F-statistics) value of 0.000.

Regression analysis implies that:

- Regression coefficient of Voc at 0.065 indicates that when Voc increases by 1% then the ROA will increase by 6.5%.
- Regression coefficient of leverage at -0.094 indicates that when leverage increases by 1% then the ROA will decrease by 9.4%.
- Regression coefficient of loss at -0.047 indicates that when loss increases by 1% then the ROA will decrease by 4.7%.

## FINDINGS AND CONCLUSION

The objective of the study is to examine the determinants of Pakistan's insurance companies profitability proxied by ROA. The study used secondary data for the period of 2005-2009 and the sample is 34 insurance companies of Pakistan. The variables tested in this paper are age, size, voc, leverage and loss ratio. Descriptive statistics and multiple regression analysis were performed to describe the profitability among Pakistani insurance companies.

The findings of this study contribute towards a better understanding of financing performance in Pakistan insurance companies. ROA and five variables that represent age of company, size, volume of capital, leverage and loss ratio were developed to test which factor best explains profitability of Pakistani insurance companies.

Result shows that there is no relationship between profitability and age of the company and there is significantly positive relationship between profitability and size. Result also shows that volume of capital was significantly and positively related to profitability. As a conclusion the results generally do not support first hypothesis while this support second and third hypotheses.

On the other hand the analysis suggests that a reverse and significant relationship between leverage ratio and loss ratio as independent variables and profitability so this result supports last two hypotheses. Hence it is concluded that ROA is affected positively by size, volume of capital and negatively by leverage and loss ratio.

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