AN INVESTIGATION INTO THE FIRM SPECIFIC FACTORS AFFECTING PROFITABILITY OF SHORT TERM INSURANCE AND REINSURANCE COMPANIES IN ZIMBABWE BETWEEN 2009-2013

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FACULTY OF COMMERCE
GRADUATE SCHOOL OF MANAGEMENT

AUGUST 2014
SUPERVISED BY: DR. H. CHIKOVA
DECLARATION

I, Jeffrey Tsvuura, hereby declare that this study is my original work and that all references materials contained therein have been duly acknowledged and that this dissertation has not previously, in its entirety or in part, been submitted to any University in order to obtain an academic qualification.

Student .................................................. Date........................................

Supervisor ................................................. Date........................................
DEDICATIONS
To my caring and supportive wife Ruvimbo
EXECUTIVE SUMMARY

Lutz (2010) defined profitability as a measure of how much output you can get from employing a certain amount of an asset. It is one of the most important objectives of financial management because one goal of financial management is to maximize the owners’ wealth. The aim of this study is to investigate firm specific factors affecting profitability of short term insurance and reinsurance companies in Zimbabwe. These factors include firm age, liquidity, leverage, firm size and volume of capital with return on assets (ROA) as a proxy for profitability.

The study looks at the relationship between profitability and a set of selected variables whereby profitability is the dependent variable with the independent variables being firm age, firm size, volume of capital, leverage liquidity ratio. The sample size was all the twenty nine (29) short term insurance and reinsurance companies that were in operation at least five years from 2009-2013 existence. The study is predominantly quantitative and involved analysing secondary data in the individual company’s financial statements available at the regulator (IPEC) to determine profitability, company size, liquidity and leverage of each insurance company over the five year period.

The results show that firm age and liquidity have a positive relationship with profitability though it is not statistically significant whilst firm size, volume of capital and leverage ratio have a negative relationship with profitability which also is not statistically significant. Further, the results from the study show that the Zimbabwean short term insurance industry has unique characteristics as evidenced by the deviations from available empirical evidence from other countries by various researchers.
ACKNOWLEDGEMENTS

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Contents
Declaration ................................................................................................................................................... i
Dedications ................................................................................................................................................. iii
Executive summary ................................................................................................................................... iv
Acknowledgements .................................................................................................................................... v
List of figures .............................................................................................................................................. iv
List of tables ................................................................................................................................................ v
Chapter 1: Introduction .............................................................................................................................. 1
1.0 Background to the study .................................................................................................................. 1
1.2 Statement of the problem .............................................................................................................. 3
1.3 Objectives of the study .................................................................................................................. 4
1.4 Research questions ....................................................................................................................... 4
1.5 Research hypothesis ..................................................................................................................... 5
1.6 Significance of the study ............................................................................................................... 5
1.7 Scope and limitations of the study ............................................................................................... 6
1.8 Assumptions .................................................................................................................................... 6
1.9 Definition of terms .......................................................................................................................... 6
1.10 Abbreviations .................................................................................................................................. 7
1.11 Structure of the research ............................................................................................................... 7
Chapter 2: Literature review ..................................................................................................................... 9
2.0 Introduction ...................................................................................................................................... 9
2.1 Structure of the insurance industry in zimbabwe ....................................................................... 9
2.2 Profitability? ................................................................................................................................... 10
2.2.1 Measures of firm profitability ................................................................................................... 12
2.3 Broad theoretical perspectives on firm profitability ........................................................................ 13
2.4 The firm specific factors that determine profitability ...................................................................... 19
2.5 Conclusion .......................................................................................................................................... 23
Chapter 3: Research methodology ......................................................................................................... 25
3.1 Introduction .................................................................................................................................... 25
3.2 Research approach ....................................................................................................................... 25
3.3 Research methodology .................................................................................................................. 26
3.4 Data and data sources ...................................................................................................................... 27
LIST OF FIGURES

Figure 1.1: Average Annual Inflation Rates: 2009-2013.................................1
Figure 2.1: Structure of the Zimbabwe Insurance Industry...............................9
Figure 2.2: Objectives of Financial Management............................................10
Figure 2.3: The three-level-factor determinants of an insurer’s profitability.........13
Figure 2.4: A traditional model of organizational climate...............................16
Figure 2.5: SCP framework.............................................................................17
Figure 3.1: Deductive approach......................................................................24
Figure 3.2 Study model ..................................................................................33
Figure 4.1: Histogram [Dependent Variable: ROA].........................................35
Figure 4.2: Normal Q-Q Plot of ROA..............................................................36
Figure 4.3: Scatter Plot....................................................................................38
**LIST OF TABLES**

Table 1.1: ROA of the short term insurance and reinsurance companies in Zimbabwe: 2009-2013 ......................................................................................................................... 2

Table 4.1: Kolmogorov-Smirnov ....................................................................................... 36

Table 4.2: Descriptive statistics ......................................................................................... 37

Table 4.3: White Test Regression ......................................................................................... 39

Table 4.4 Chi Square Calculated ......................................................................................... 39

Table 4.5: Test for autocorrelation ....................................................................................... 40

Table 4.6: Correlations between profitability and selected independent variables .... 41

Table 4.7 Correlation between company age and ROA ...................................................... 42

Table 4.8 Correlation between firm size and ROA .............................................................. 42

Table 4.9: Correlation between Volume of capital and ROA .............................................. 42

Table 4.10: Correlation between leverage ratio and ROA .................................................. 43

Table 4.11: Correlation between liquidity and ROA .......................................................... 43

Table 4.12: Collinearity Statistics ......................................................................................... 44

Table 4.13: Collinearity Statistics (VOC removed) ............................................................. 45

Table 4.14: ANOVA ........................................................................................................... 45
CHAPTER 1: INTRODUCTION

1.0 BACKGROUND TO THE STUDY

Following a decade of contraction from 1998 to 2008, Zimbabwe’s economy recorded real growth of more than 9% per year in 2010-11 (Zimbabwe National Budget Statement, 2014), making it one of the world’s fastest-growing economies. This performance coincides with the adoption of the United States dollar (USD) and South African rand as the official currencies, which swiftly squelched rampant hyperinflation and stabilised the economy (Richardson, 2013). Figure 1 shows the average annual inflation from 2009-2013.

Figure 1.1: Average Annual Inflation Rates: 2009-2013

Source: ZIMSTAT (2014)

Because of the adoption of multi-currencies and the lack of control of money supply the Zimbabwean economy experienced liquidity challenges. Some companies were forced to start afresh in the new environment and recovered from the debilitating effects of the hyperinflation especially those in the retail sector. However, others in sectors like manufacturing and insurance took time to recover with the multicurrency regime presenting more challenges making it harder for them to recover.

A review of financial statements of short insurance and reinsurance companies in Zimbabwe since the adoption of the multicurrency regime in 2009 to December 2013 indicates that the level of profitability in the industry varied from firm to firm and from
year to year. Some companies made profits consistently in the five year period like Alliance, Cell and Champions whilst for others like Tristar and Regal they were fluctuating from one year to another as shown by Table 1.1 below.

Table 1.1: Return on Assets (ROA) of the short term insurance and reinsurance companies in Zimbabwe: 2009-2013

<table>
<thead>
<tr>
<th>Company Name</th>
<th>2009</th>
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<tr>
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<td>2 Allied</td>
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Source: Ipec Annual Reports

Another observation from the financial statements was that some companies like RM, Tropical Re and ZB Re made significantly high profits during the period under
review whilst others like Baobab Re and KFMS made significantly huge losses according to the industry’s standards as shown by Table 1 above. Table 1 above also shows the variations of return on assets (ROA) from one company to the other across the twenty nine (29) short term insurance and reinsurance companies over the five years from 2009-2013. For instance in 2009 Allied had a return on assets (ROA) of 95% whilst Altfin had -43% yet the companies operate in the same industry.

Given the above background, it become imperative to investigate the firm specific factors that caused profitability of short term insurance and reinsurance companies to vary from one company to another yet these companies operate in the same environment. In fact, what is it really that caused some companies to be more profitable than others as shown above in Table 1? Could there be some internal advantages that led other firms to have some competitive advantages over others?

1.2 STATEMENT OF THE PROBLEM
Profitability is one of the most important objectives of financial management. A company might express its main objectives in terms of profit maximization and targets can be set for profit growth over a strategic planning period (ACCA, 2011). During the period of 2009-2013 the annual reports of short term insurance and reinsurance companies in Zimbabwe show large fluctuations in profitability from one company to another as shown by Table 1.1 above.

These variations in profitability among short insurance and reinsurance companies suggests that there are firm-specific factors that play crucial role in influencing the short term insurance and reinsurance companies’ profitability than just the general factors. It is therefore important to identify what these factors are and how they help insurance and reinsurance companies in Zimbabwe to formulate strategies that will help to increase profitability in this environment and also for potential investors to be able to forecast the profitability when making investment decisions. Further, there is need to investigate and determine those factors that have a greater impact on the profitability of the company.
A review of the available literature shows that most of the studies conducted focused on the determinants of general insurance industry and banking sectors profitability but very few on the short term insurance and reinsurance industry. For example, there was a study done in Pakistan by Malik (2011) but it focused on the general insurance companies' profitability. Another was done in Ghana by Akotey and Sackey (2013) and the area of focus was on the financial performance of life insurance companies in Ghana. In Zimbabwe there is little evidence of studies that focused on firm specific factors that determines profitability of short term insurance and reinsurance hence this research focused on that.

1.3 OBJECTIVES OF THE STUDY
The research objectives of this study are:

1. To identify the internal factors that affect the profitability of short term insurance and reinsurance companies in Zimbabwe.
2. To measure the extent to which these internal factors exert impact on the profitability of short term insurance and reinsurance companies in Zimbabwe.
3. To determine the relationship between profitability and internal factors affecting insurance and reinsurance companies in Zimbabwe.
4. To recommend to management on the key drivers of profitability in short term insurance and reinsurance companies.

1.4 RESEARCH QUESTIONS
1. What are the internal factors that affect the profitability in the short term insurance and reinsurance industry in Zimbabwe?
2. To what extent do these internal factors exert impact on the profitability of short term insurance and reinsurance companies in Zimbabwe?
3. Is there a relationship between profitability and internal factors of short term insurance and reinsurance companies in the local industry?
4. What are the general factors that affected profitability of short term insurance and reinsurance companies?
1.5 RESEARCH HYPOTHESIS

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

H1: Age of the company and profitability of short term insurance and reinsurance companies in Zimbabwe are positively related.

H2: Size and profitability of short term insurance and reinsurance companies in Zimbabwe are positively related.

H3: Any increase in volume of capital will result in an increase in profitability of short term insurance and reinsurance companies in Zimbabwe.

H4: Leverage and profitability of short term insurance and reinsurance companies in Zimbabwe are negatively related.

H5: Liquidity ratio and profitability of short term insurance and reinsurance companies are negatively related.

1.6 SIGNIFICANCE OF THE STUDY

This study was mainly driven by the limited attention given to this subject in Zimbabwe. An analysis of previous researches shows that main focus was on financial institutions like banks and asset management companies but not on insurance and reinsurance companies particularly the short term sector. Even though a few researchers did some work on the insurance industry, they focused only on profitability analysis not on those internal factors that affect profitability. Therefore, this study provides empirical evidence on the factors that affect profitability of short term insurance and reinsurance companies in Zimbabwe.

In addition to the above, several other stakeholders will find the results that will be produced by this study useful and these include;

- Management-this study will help the management in the strategy formulation process to clearly understand the factors that have a significant impact on profitability.

- Regulators-the study can also be useful to the regulator to monitor the key factors that cause failure of companies such that they formulate appropriate policies.
Customers: The study will also help users of insurance and reinsurance products in making decisions on which companies to deal with.

Investors: This will be useful to investors in making their decisions and understanding the industry before committing funds.

1.7 SCOPE AND LIMITATIONS OF THE STUDY

The study focuses on short term insurance and reinsurance companies registered by IPEC (which is the regulatory body for the insurance industry in Zimbabwe) that have been in existence from the beginning of 2009 up to 31 December 2013. The study does not cover the long term insurance and reinsurance companies. Financial reports available from the regulator (IPEC) will be used to assess factors such as profitability, size, volume of capital, leverage and liquidity of the individual companies whilst other records such as company registration documents will be used to determine the age of the companies.

The study is restricted only to the quantitative measures of determinants of short term insurance and reinsurance companies' profitability in Zimbabwe without any all-encompassing performance measurement tool. The results would have been much better if external or macro-economic factors that affect profitability were included. However, due to resource constraints such as time and finances, the study was only restricted to this small area.

1.8 ASSUMPTIONS

In this study, profitability is measured by Return on Assets (ROA) where ROA is profit before tax divided by total assets.

1.9 DEFINITION OF TERMS

Reinsurance - Also known as "insurance for insurers". The practice of insurers transferring portions of risk portfolios to other parties by some form of agreement in order to reduce the likelihood of having to pay a large obligation resulting from an insurance claim. The intent of reinsurance is for an insurance company to
reduce the risks associated with underwritten policies by spreading risks across alternative institutions.

- Short term insurance/reinsurance-insurance business that expires in less than one year.
- Long term insurance (life insurance) is a financial cover for a contingency linked with human life, like death, disability, accident, retirement and others.

1.10 ABBREVIATIONS

- IPEC-Insurance and Pensions Commissions
- SPSS-Statistical Package for Social Science
- GDP-Gross Domestic Product
- RBZ-Reserve Bank of Zimbabwe
- EBIT-Earnings Before Interest And Tax
- PBT-Profit before Tax
- ROA-Return on Assets
- ROE-Return on Equity
- ROCE-Return on Capital Employed
- VOC-Volume of capital
- LEV-Leverage
- LIQ-Liquidity

1.11 STRUCTURE OF THE RESEARCH

The remaining sections of this study are as follows:

**Chapter Two**- this will focus on the review of the existing body of literature relating to the firm specific factors that determine profitability in the reinsurance industry and some empirical evidence from other countries.

**In Chapter Three** there will be the research approach, methodology, data sources and how it was analyzed.

**Chapter Four** presents the results and analysis of the study
Chapter Five provides the conclusions from the research, gives recommendations and areas for further study.
CHAPTER 2: LITERATURE REVIEW

2.0 INTRODUCTION

This chapter focuses on the concept of insurance companies’ profitability and investigates the factors that affect profitability of short term insurance and reinsurance companies in Zimbabwe. These factors will be classified as internal factors which are under the control of management. While organizational performance has attracted scholarly attention in corporate finance literature it has received little attention in the context of the insurance sector (Malik, 2011).

The chapter is divided into four main sections; the first section looks at the structure of the whole insurance industry in Zimbabwe whilst the second section deals with the concept of profitability. The third section delves on the broad theoretical perspectives on firm profitability by various prominent scholars like Porter and the final section explores the firm specific factors that determine profitability in the short term insurance and reinsurance sector including empirical evidence from other countries.

2.1 STRUCTURE OF THE INSURANCE INDUSTRY IN ZIMBABWE

The insurance industry in Zimbabwe is made up of life insurance and reinsurance companies, and non-life insurance and reinsurance companies. There are also insurance brokers who bring buyers and sellers together. It is regulated by the Insurance and Pensions Commission (IPEC) established in terms of the Insurance Act Chapter 24:07 of Zimbabwe. The industry can be divided into two main categories: short term and long term as shown by Figure 2.1.

Short term insurance (non-life), in broad terms, is insuring against the theft, loss, damage or destruction of physical objects owned by the insured and applies for a limited period (normally less than one year), with an annual review taking place as if the short term insurance were being initiated afresh (Financial Consumer Agency Canada, 2011). In some cases short-term insurance might be short periods of time with calendar dates attached for example, a company might insure its vehicle fleet for the duration of a certain project. On the other side, long term insurance (life insurance) is a
financial cover for a contingency linked with human life, like death, disability, accident and retirement (Insurance Regulatory and Development Authority of India, 2010).

**Figure 2.1: Structure of the Zimbabwe Insurance Industry**

![Diagram of the Zimbabwe Insurance Industry]

Source: IpecReports

According to an IPEC (2013), the short term insurance sector had twenty five (25) short term insurers and nine (9) short term reinsurers whilst the long term insurance sector had eight (8) life assurance companies and two (2) reinsurers. This study will focus on the short term side of the industry that is the direct insurance and reinsurance companies and companies which have been in operation for five years from 2009-2013 were selected.

### 2.2 PROFITABILITY

According to Paramasivan et al (2010) the main aim of any kind of economic activity is earning profit. Lutz (2010) defined profitability as a measure of how much output you can get from employing a certain amount of an asset. Hampton (2009) clarified profitability ratio as a class of financial metrics that are used to assess a business’s ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. Therefore, the term ‘profitability’ is a relative measure where profit is expressed as a ratio. Similarly, Koller (2011) argued that profitability is the most important and reliable indicator as it gives a broad indicator of
the ability of an insurance company to raise its income level. In practice, executives define profits as the difference between total earnings from all earning assets and total expenditure on managing entire asset-liabilities portfolio (Kastur, 2007).

Firm profitability is generally regarded as an important precondition for long-term firm survival and success. Moreover it significantly affects the firm’s achievement of other financial goals (Yazdanfar, 2013). It is generally accepted that the primary strategic objective of a commercial company is the long-term goal of the maximization of the wealth of the shareholders (CIMA, 2008). However, if the underlying objective is to maximize shareholder wealth, targets should be set for growth in profits after tax because these are the profits that are distributable to the company’s owners (ACCA, 2011). Thus for a firm to maximize shareholder wealth decisions should be made in a manner that the profit of the concern are maximized. The way to do this is to maximize economic profit. Economic profit is the difference between revenues and costs where the costs include the opportunity costs of invested funds (Peterson et al, 1999). Figure 2.2 shows that a business must make profit then wealth of the shareholders can be maximized.

**Figure 2.2: Objectives of Financial Management**

Source: Paramasivan et al. (2010)
Chen et al (2004) in their study found that “higher profits provide both the means (greater availability of finance from retained profits or from the capital market) and the incentive (a high rate of return) for new investment”. This definition means that insurance companies on one hand are required to be profitable so as to have high rate of return for new investment whilst on the other hand they need to be profitable in order to be solvent enough so as to make other industries in the economy as they were before even after risk occurred.

For an insurance company to be profitable, it has to earn more revenues than being disbursed as expenses. According to Swiss Re (2008) profits are determined first by underwriting performance (losses and expenses, which are affected by product pricing, risk selection, claims management, and marketing and administrative expenses); and second, by investment performance, which is a function of asset allocation and asset management as well as asset leverage.

2.2.1 MEASURES OF FIRM PROFITABILITY
Profitability can be measured by relating output as a proportion of input or matching it with the results of other firms of the same industry or results attained in the different periods of operations (Paramasivan et al 2010). Greene et al (2004) argued that the performance of insurance companies in financial terms is normally expressed in net premium earned, profitability from underwriting activities, annual turnover, return on investment, return on equity. These measures could be classified as measures of profitability and investment performance measures.

According to Al-Shami (2008) there are different ways to measure profitability such as: Return on assets (ROA), return on equity (ROE) and return on invested capital (ROIC). However, most studies on insurance company profitability have used ROA (the before tax profits divided by total assets) as the key indicator of a firm’s profitability. For instance Hardwick et al (1999) and Malik (2011) have suggested that ROA is a better measure of profitability than other ratios.
ROA is an indicator of how profitable a company is relative to its total assets and it gives us an idea as to how efficient management is in using its assets to generate earnings (Al-Shami, 2008). This is probably the most important single ratio in comparing the efficiency and financial performance of insurance companies as it indicates the returns generated from the assets that insurers own (Mehari et al, 2013). The formula for the performance measure is given as follows:

\[ \text{ROA} = \frac{\text{Net profit before tax}}{\text{Total Assets}} \]

A higher ROA means better profits during the period. Better profits imply a strong capacity in dealing with losses or financial stresses and hence, a lesser need for reinsurance (Powell et al., 2007), which may lead to an increase in retained premiums. This study will adopt the approach developed by Cole et al (2006) and Elango et al. (2008) which defines ROA as pre-tax earnings divided by the total assets.

Return on invested capital (ROIC) is another measure of profitability used to assess a company’s efficiency in allocating the capital under its control in profitable investments. This measure gives a sense of how well a company is doing in using its money to generate returns.

2.3 BROAD THEORETICAL PERSPECTIVES ON FIRM PROFITABILITY

An insurer’s profitability is influenced by both internal and external factors. Akotey et al (2012) argued that internal factors focus on an insurer’s specific characteristics whereas the external factors concern both industry features and macroeconomic variables.

In a study on the financial performance of life insurance companies in Ghana Akotey et al (2012) argue that profitability of insurance companies can also be analyzed at the micro, meso and macro levels of the economy. The micro level refers to how firm specific factors such as size, capital, efficiency, age, and ownership structure affect profitability. The meso and macro levels refer to the influence of support institutions and macroeconomic factors, respectively. The three-level-factor determinants of insurers’ profitability are shown in Figure 2.3. At the micro level, profit is the essential pre-
requisite for the survival, growth and competitiveness of insurance firms and the cheapest source of funds (Buyinza et al., 2010).

Akotey et al (2012) argued that without profits, no insurer can attract outside capital to meet its set objectives in this ever changing and competitive globalized environment. They further argued that profit does not only improve upon insurers’ solvency state but it also plays an essential role in persuading policyholders and shareholders to supply funds to insurance firms. Thus, one of the objectives of management of insurance companies is to attain profit as an underlying requirement for conducting business.

**Figure 2.3: The three-level-factor determinants of an insurer’s profitability**

Source: Akotey et al (2012)
The following section will look at the broader theoretical perspectives on firm profitability namely the Market-based view (MBV), the Resource Based View (RBV), Strategy-structure-performance (SSP), Organization-environment structure-performance (OESP) and Structure-conduct-performance (SCP). These theoretical perspectives improve understanding of the factors that have an impact on profitability levels of different firms operating in the same industry.

2.3.1 MARKET BASED VIEW
The leading proponent of this approach is Michael Porter (1980, 1985). In his book Competitive Strategy (1980), he introduced the five forces model and the concept of generic strategies. According to Lowson (2002), the argument is that, it is not the industry that an organization is in that counts, but where it wants to compete in terms of the nature of the competition. Porter (1980a, 1985), argued that the state of competition in an industry is determined not by the existence of competition but also by the existence of substitute products or services and the ability of new competitors to enter the industry. Porter argues that it is the collective strength of the five forces that determine industry profitability. The stronger the forces collectively the less likely the industry is to be profitable in the long run; conversely the weaker the forces the greater the opportunity for high levels of profit. Management’s role therefore is to analyze the industry to determine its strengths and weaknesses.

2.3.2 RESOURCE BASED VIEW
The Resource Based View (RBV) focuses on firm-level profitability determinants (Yazdanfar, 2013). The essence of the resource-based view is its focus on the individual resources, competencies and capabilities of the organization, rather than on the strategies that are common to all companies in the industry (Lowson, 2002). Unlike the other approaches like the market based view, this approach suggests that firm performance is mainly determined by internal rather than external variables (Barney, 1991). The RBV explains firm performance in various terms, for example, explaining profitability mainly with reference to specific firm-level characteristics, resources, and capabilities (Jovanovic, 1982; Wernerfelt, 1984).
According to the resource based view, firms follow heterogeneous historical paths and, as a result, create different qualifications that affect their capabilities in different ways (Jovanovic, 1982; Wernerfelt, 1984). Within an industry firms are successful because they can access a range of resources and thus gain competitive advantages over their rivals. In this context, “resources” refer to all tangible and intangible assets, such as cash, loans, capabilities and qualifications, organizational processes, firm attributes, information, and knowledge (Wernerfelt, 1984).

While traditional approaches such as the Structure Conduct Performance (SCP) and Market Based View (MBV) perspectives emphasize the role of industry characteristics in explaining firm profitability, the Resource Based View (RBV) stresses the importance of firm-level variables (Wernerfelt, 1984; Barney, 1991; Mahoney and Pandian, 1992).

2.3.3 ORGANIZATION-ENVIRONMENT STRUCTURE-PERFORMANCE (OESP)

Hansen and Wernfelt (1989) argued that organizational performance is determined by three factors namely organizational factors, people factors and environmental factors as shown by Figure 2.4 below. They argued that these factors will then influence organizational climate and ultimately organizational performance.

In their model, it is assumed that the presence of work groups with clear, consistent and high individual, group, and organizational standards and goals, linked through effective communications utilizing participatory decision-making techniques, is evidence of good management (Hansen and Wernfelt, 1989).

The model further, states that employees who feel properly rewarded with pay and recognition, and who have leaders managers who train, help, listen and are experts in their tasks are more productive. Finally, workers who are members of work groups that have standards and are mutually supportive lead to better performance. In this model people in the organization plays an important role as they can determine the success or failure of an organization. It adopts the position of Theory Y by McGregor on the behavior of workers.
Figure 2.4: A traditional model of organizational climate

ENVIRONMENTAL FACTORS
(Sociological, political, economic, technological)

PEOPLE FACTORS
(Skills, personalities, age)

ORGANIZATIONAL CLIMATE
- Decision making practices
- Communication flow
- Goal emphasis
- HRM emphasis
- Leadership
- Group processes
- Job conditions

INDIVIDUAL BEHAVIOR

ORGANIZATION PERFORMANCE

Source: Hansen and Wernfelt (1989)
2.3.4 STRATEGY-STRUCTURE-PERFORMANCE

Chandler (1962) postulated that that a combination of strategy and structure results in improved performance. He argued that changes in firm strategy will cause changes within the organizational structure so that strategy can be properly developed and higher performance achieved (Chandler, 1962; Rumelt, 1974; Suzuki, 1980).

2.3.5 STRUCTURE-CONDUCT-PERFORMANCE (SCP)

The structure-conduct-performance (SCP) model postulates that the degree of concentration in an industry determines firm behavior and profitability (Stierwald, 2009). The SCP model is embedded in neoclassical theory and asserts that firms in concentrated industries are more profitable than firms in perfectly competitive markets (Bain, 1951). This framework attempts to describe how the key aspects of market structure relate to each other. Martin (2002) summarizes this framework approach succinctly … “The central hypothesis (of the SCP framework) is that observable structural characteristics of a market determine the behavior of firms within that market, and that the behavior of firms within a market, give structural characteristics, determines measurable market performance.”

Figure 2.5: SCP framework

Source: Martin (2002)

The SCP paradigm posits specific causal relationships between market structure, conduct and performance. In particular, market structure determines conduct and conduct in turn determines performance.
2.4 THE FIRM SPECIFIC FACTORS THAT DETERMINE PROFITABILITY

Profitability of insurance companies can be determined by various factors as shown by Akotey et al. (2012)'s three-level-factor determinants of insurers' profitability above. However, most study on the area such as that by Malik (2011) in Pakistan, Kozak (2011) in Poland, Al-Shami (2008) in United Arab Emirates (UAE) and Swiss Re (2008) in Egypt conducted their research with regards to internal determinants of profitability in insurance companies and the most common factors that they considered are size of the company, age, leverage, liquidity, volume of capital growth rate and management competence index. The following section will look at empirical evidence for each variable separately showing its impact on profitability.

2.4.1 FIRM SIZE

It is said that the size of a firm affects performance in many ways. Key features of a large firm are its diverse capabilities, the abilities to exploit economies of scale and scope and the formalization of procedures (Majumdar, 1997). Majumdar (1997) argued that these characteristics, by making the implementation of operations more effective, allow larger firms to generate superior performance relative to smaller firms. This observation is supported by Swiss Re (2008) which noted that large insurers normally have a greater capacity for dealing with adverse market fluctuations than small firms. Furthermore, large companies can usually recruit able employees with professional knowledge relatively easily compared with small insurers. As a result, large companies are expected to perform better relative to small firm (Shiu, 2004). Thus the bigger the firm, the better its performance due to economies of scale.

Proponents of the resource based view raised a compelling argument in an attempt to explain the impact of firm size on performance of an organization. In a study by Yazdanfar (2013) on the profitability determinants among micro firms from Sweden, there is a positive relationship between firm size and profitability, because the larger the firm, the better its access to resources and the more likely it is to take advantage of economies of scale to diversify its product range, resulting in increased profitability.
Studies by Al-Shami (2008) on profitability of insurance companies in United Arab Emirates (UAE) concluded that there exist a positive and statistical significant relation between firm size and profitability.

2.4.2 FIRM AGE

The age of the firm has an impact on the profitability of the firm. Advocates of the resource-based view (RBV) argued that the older the firm, the more easily it can acquire resources over time (Autio, 2005). This is because firm age is normally associated with greater experience, more information, better reputation, and greater access to business networks and financial institutions, all of which help the firm overcome limited access to resources and operate more efficiently (Curran et al., 1993).

Studies that examine the relationship between firm age and profitability have produced mixed results. While some of these find that age and profitability are negatively related, others, such as Claver et al. (2002) and Ito and Fukao (2006), find a positive and significant relationship between them. Similarly, Malik (2011) in his studies in Pakistan found that there is significantly positive association between age and size of the company and profitability. The older the firm the higher may be the profitability. The explanation for this could be that older firms have more experience and are likely to be efficient in their operations and process thereby decreasing the cost of production.

2.4.3 LEVERAGE

Financial leverage refers to the relative magnitude of debt compared to equity financing (Reilly et al, 2003). It is a proxy for financial risk – that is, the incremental equity risk due to the use of debt in addition to equity financing (Nissim, 2010). Insurance leverage could be defined as reserves to surplus or debt to equity. The risk of an insurer may increase when it increases its leverage. Studies in capital structure confirm that a firm’s value will increase up to optimum point as leverage increases and then declines if leverage is further increased beyond that optimum level. For instance Chen and Wong (2004) stated that leverage beyond the optimum level could result in higher risk and low value of the firm.

2.4.4 VOLUME OF CAPITAL

An analysis of empirical studies on insurance companies' profitability shows that there is no single definition of capital. Some authors like Aburime (2008) defined capital narrowly focusing just on equity when he said: “Equity capital is the amount contributed by the owners of an insurance (paid-up share capital) that gives them the right to enjoy all the future earnings”. Others like Athanasoglou et al. (2005) defined capital more broadly as the amount of owners’ funds available to support a business. Whatever definition is adopted, volume of capital is extensively used as one of the determinants of insurance companies’ profitability since it indicates the financial strength of the firm.

In a study by Malik (2011) in Pakistan of non-life insurance companies’ profitability, they found positive and statistically significant relationship between insurance capital and profitability. Another study by Al-Shami (2008) also found that there exists a positive and significant relationship between volume of capital and profitability of the United Arab Emirates (UAE) insurance companies.

2.4.5 MANAGEMENT COMPETENCE INDEX

Boyatzi (1982) defines competence as “an underlying characteristic of a person”. He stated that it could be, “motive, trait, skill, aspect of one’s self-image or social role, or a body of knowledge which he or she uses”. Woodruffe (1993) argued that the term ‘competence’ refers to a ‘set of behaviors, skills, knowledge and understanding which are crucial to the effective performance of a position’. Nordhaug and Gronhaug (1994) defined competence as “work-related knowledge, skills and abilities”. Hamel and Prahalad (1994) define competence as a bundle of skills and technologies that enable company to provide benefits for customers rather than a single skill or technology.
In a study by Almajali et al. (2012) on factors affecting the financial performance of insurance companies in Jordan, management competence index has a significant impact on financial performance of insurance companies. The findings are also consistent with the results of the studies by Liargavas and Skandalis (2008) and Merikas et al. (2006). Thus the level of education of professionals affects the assessment of the quality of their competence and thus the company’s ability to achieve future success.

2.4.6 LIQUIDITY

Liquidity from the context of insurance companies is the probability of an insurer to pay liabilities which include operating expenses and payments for losses/benefits under insurance policies, when due (Chen and Wong, 2004). For an insurer, cash flow (mainly premium and investment income) and liquidation of assets are the main sources of liquidity (Chen and Wong, 2004).

In a study by Shiu(2004), insurers with more liquid assets outperform those with less liquid assets thus performance of non-life companies is positively related to asset liquidity. This was because the insurer with more liquid assets would be less likely exposed to liquidity risk than would an insurer with less liquid assets. However, other empirical evidences with regard to liquidity revealed almost inconsistent results. For instance Ahmed et.al (2011) in his investigation in Pakistan found that profitability measured as Return on Assets (ROA) has a statistically insignificant relationship with liquidity. In contrast, Chen and Wong (2004) in their study on the important determinants of financial health of insurance companies found that there is a negative relationship between liquidity and profitability. Similarly, Hakim and Neaime (2005) observed that liquidity, current capital and investment are the important determinants of banks profitability.

2.4.7 REINSURANCE DEPENDENCE

It is common practice in the insurance industry for insurers to take out reinsurance cover to stabilize earnings, increase underwriting capacity and provide protection against catastrophic losses. In a study by Shiu(2004) on the determinants of company performance in the United Kingdom (UK), the purchase of reinsurance can substitute for
capital and allow an insurance firm to hold less capital without increasing its insolvency probability. Shiu(2004) argued that companies rely on reinsurance to a large extent in order to stabilize their results and take on larger risks, which cannot be justified by their capital base alone or by arbitrage. However, since there is also a cost for reinsurance, determining an appropriate retention level is important for general insurers, and they have to try to strike a balance between decreasing insolvency risk and reducing potential profitability. Although it increases operational stability, increasing reinsurance dependence that is lowering the retention level, reduces the potential profitability. Therefore, reinsurance dependence may be negatively related to performance.

2.4.8 GROWTH RATE
Growth as measured by the percentage change in total assets or sometimes percentage change in premiums of reinsurance companies is expected to be positively related with profitability of insurance companies(Mehari et al,2013). They argue that insurance companies having more and more assets over the years have also better chance of being profitable for the reason that they do have internal capacity though it depends on their ability to exploit external opportunities.


2.5 CONCLUSION
An analysis of the existing body of literature shows that most researchers focused on factors affecting profitability of banks rather than insurance companies. Consequently there is less literature with regards to insurance companies as compared to banks. A further analysis of the existing body of literature concerning insurance companies could be classified into two: determinants of financial performance of life and non-life insurance companies. Empirical evidences regarding determinants of insurance companies focused only on internal factors such as age, size, leverage, growth, volume
of capital, tangibility of assets and liquidity. The results found by the researchers mentioned above showed some inconsistencies and varied from one country to another.
CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter seeks to explain the steps and procedures used to conduct the study. It also explains the approach adopted to analyze the factors that affect profitability on short term insurance and reinsurance companies in Zimbabwe. A detailed discussion is then made regarding the type of data used and the techniques employed to collect the data, the sampling mechanisms, the methods utilized to manage and analyze the data, and the process of constructing empirical model with identification and measurement of its components, measurement and selection of variables, expected relations between the dependent and independent variables.

3.2 RESEARCH APPROACH

When carrying out investigative study in business and social research, two approaches are common namely deductive and inductive. According to Beiske (2007) deductive research approach explores a known theory or phenomenon and tests if that theory is valid in given circumstances. Snieder and Larner (2009) inform that in deductive approach reasoning starts with a theory and leads to a new hypothesis, which is going to be confirmed or rejected as result of the research. Figure 1 illustrates the deductive approach diagrammatically.

Figure 3.1: Deductive approach

![Deductive Approach Diagram](image)

Source: Snieder and Larner (2009)

On the other hand, inductive approach starts with the observations and theories are formulated towards the end of the research and as a result of observations (Goddard and Melville, 2004). It involves the search for pattern from observation and the
development of explanations – theories – for those patterns through series of hypotheses (Bernard, 2011). Thus, at the beginning of the research no theories would apply in inductive studies and as such the researcher is free in terms of altering the direction for the study after the research process had commenced.

This study will use the deductive approach as it examines previous findings in the literature with the aim to construct an empirical model which is then applied to the Zimbabwean short term insurance and reinsurance industry. Further, hypotheses are formulated to test collinear relationships between determinants and its dependent variable: profitability of short term insurance and reinsurance companies in Zimbabwe.

The greatest advantage of the deductive approach as cited by Yuqi Li(2007) is that it brings a high level of objectiveness in research through external observation insofar as the choice of questions and subsequent phrasings are not subjective whereas the inductive approach provides a high level of subjectivity and a number of theoretical possibilities based on the context of the individual research situation.

3.3 RESEARCH METHODOLOGY
A research method is a strategy of inquiry which includes research design and data collection (Myers and Avison, 2002). The choice of research methodology influences the way a researcher collects data. Specific research methods also imply different skills, assumptions and research practices. The methodology which the researcher used in conducting the study is based mainly on the research objectives and the availability of relevant data and information. As a result, this research is predominantly based on quantitative research whereby an econometric model to identify and measure the determinants of profitability in the short term insurance and reinsurance industry in Zimbabwe was constructed.

The study adopted multiple regression analysis to measure the effects of determinants on profitability on short term insurance and reinsurance companies in Zimbabwe. In a multiple regression model, multi-collinearity exists when two independent variables are
perfectly correlated with each other (Agyei-Mensah, 2012). Drury (2007) as cited by Mensah(2012) sums up the multi-collinearity in multiple regression analysis as follows: “Multiple regression analysis is based on the assumption that the independent variables are not correlated with each other. When the independent variables are highly correlated with each other, it is very difficult, and sometimes impossible, to separate the effects of each of these variables on the dependent variable. This occurs when there is a simultaneous movement of two or more independent variables in the same direction and at approximately the same rate.”

The study also analyzed empirical evidence from other countries to identify those factors which are likely to have an effect on profitability of short term insurance and reinsurance companies in Zimbabwe. From the empirical evidence gathered, factors such as firm size, firm age, liquidity, leverage and volume of capital were identified by several researchers as having an effect on profitability and as such they have been selected to be included as explanatory variables in the model.

3.4 DATA AND DATA SOURCES
The study mainly used secondary data relating to the short term insurance and reinsurance industry available at the Insurance and Pensions Commission (IPEC) to answer the research questions. The advantage of using secondary data includes the higher quality data compared with primary data collected by researchers themselves (Stewart and Kamins, 1993) as cited by Yuqi Li (2007).

The main sources of the secondary data used in this study are the individual short term insurance and reinsurance company’s financial statements and other data from the regulator (IPEC). The data collected and analyzed is a panel of twenty nine (29) short term insurance and reinsurance companies operating in Zimbabwe over the last five (5) years from 2009-2013. The study collected data on the following variables:

- Profitability measured as ROA
- Company size
- Company age
- Volume of capital
- Company leverage
- Company liquidity

The researcher used panel data in order to meet the research objectives as it is better than the single time series or cross-sectional alone. According to Reyna (2000), panel data (also known as longitudinal or cross-sectional time series data) is a data set in which the behavior of entities is observed across time. The entities could be states, companies; individuals etc. According to Brookes (2008), a researcher can address a broader range of issues and tackle more complex problems with panel data than would be possible with pure time-series or pure cross-sectional data alone.

In addition to the above, panel data allows the researcher to examine how variables or the relationships between them change dynamically (over time). Another advantage of panel data cited by Reyna (2000) is that it allows the researcher to control for variables that cannot be observed or measured like cultural factors or difference in business practices across companies; or variables that change over time but not across entities for instance national policies, federal regulations, international agreements and so on. Thus, it accounts for individual heterogeneity.

3.5 STUDY POPULATION AND SAMPLE
As at 31 December 2013, twenty five (25) short term insurance companies and nine (9) short term reinsurance companies were operational but twenty nine (29) companies which have been in operation over the five year period from 2009-2013 have been considered. The five year period is assumed to be relevant because in most finance literatures and researches five years and above is the recommended length of data for any meaningful observations to be made.

3.6 DATA ANALYSIS
The study used descriptive analysis and regression analysis to analyze the data collected. As a result, this section gives the descriptive analysis of the panel data and
variables in the study together with some other important test like normality of data and correlation analysis between dependent and independent variables. Further, this section will analyze the results of the linear regression and data analysis that constitute the main findings of this study.

3.6.1. Descriptive Analysis
Descriptive statistics consists of the collection, organization, summarization, and presentation of data (Keller, 2010). It explores and presents an overview of all variables used in the analysis. In this section the statistical measures like mean, minimum, maximum, standard deviation are produced for the variables under study for the period 2009 to 2013.

3.6.2. The Correlation Analysis
Correlation analysis measures the strength of the relationship between the variables (Weiers, 2008). This section will present how variables are related with each other. This is important as the results of the analysis will help to show the nature, direction and significant of the correlation of the variables considered under this study.

The Spearman's rho correlation will be used as it is commonly used by researchers. This was used mainly because of the small sample size and the Spearman's rho will help in getting a clear result. Bryman and Cramer (2007) suggested that Spearman's rho is a powerful non-parametric method of dealing with data thus they can be used in a wide variety of contexts since they make fewer assumptions about variables.

3.6.2.1 Detecting multi-collinearity
This study used variance inflation factors (VIF) to detect multi-collinearity. Young (2013) defined VIF as $VIF_j = 1/[1 - R^2_j]$ where $R^2_j$ represents the coefficient of determination after regressing $X_j$ on the remaining independent variables.
Using a common rule of thumb when $VIF_j = 1$, then there is no collinearity, if $1 < VIF_j < 5$, then collinearity is moderate and if $VIF_j \geq 5$, then collinearity will be strong. Generally, a higher VIF indicates greater chances that multicollinearity will be a problem.

### 3.6.2.2 Dealing with multi-collinearity

In the event that multi-collinearity is a problem, the researcher will try to increase the size of the sample as this reduces the standard error other things being equal. Another way to deal with the problem is by combining variables into a single composite variable by constructing indexes.

### 3.6.3. Regression Analysis

Regression analysis is used to predict the value of one variable on the basis of other variables (Keller, 2011). The study used regression analysis to analyze the relationship between the profitability of short term insurance and reinsurance companies in Zimbabwe against explanatory variables such as firm age, firm size, leverage, liquidity, volume of capital and firm growth. The aim of regression analysis is to develop a mathematical equation or model that accurately describes the nature of the relationship that exists between the dependent variable and the independent variables (Keller, 2011). As a result the primary motive for using regression analysis is forecasting.

In terms of regression analysis, as panel data is adopted in this study, corresponded regression model is selected from fixed effect and random effect regression. According to Reyna (2000), fixed effects regression is the model used when the researcher is only interested in analyzing the impact of variables that vary over time. In fact, it allows the researcher to use the changes in the variables over time to estimate the effects of the independent variables on dependent variable.

### 3.7 DESIGN OF EMPIRICAL MODEL

An analysis of the available literature and other studies carried out on the subject concluded that the appropriate functional form for use in studies of this nature is a linear function although there are dissenting opinions. According to Davidson et al, (1985) as
cited by Swiss Re (2008) studies were done and the results supported the use of the linear function.

The regression model is used to identify the relationship between the profitability of short term insurance and reinsurance companies and liquidity, age of company, leverage ratio, company size and volume of capital. The dependent variable is (profitability) and independent variables are age of companies, size of companies, leverage ratio, volume of capital and liquidity.

In choosing between fixed and random effects, the researcher used the Hausman test. The study will adopt the random effects if it is statistically justifiable to do so as it will give better P-values. This is mainly because they are a more efficient estimator. Based on the results obtained from the Hausman test, the model is estimated through random effect regression. Using the Hausman test, the researcher will be able to check a model that is more efficient against a less efficient. For estimation purposes, the following general linear model is used:

\[ \text{ROAi},t = \alpha + \sum \beta_j \text{Xji},t + \upsilon_i \]

Where
\text{ROAi},t = the return on assets of short term insurance and reinsurance i for period t (used as a proxy for profitability);
\alpha = the regression constant;
\text{Xji},t = short term insurance and reinsurance specific determinants;
\upsilon_i,t = \epsilon_i,t is the disturbance term.

Using the above model the researcher will be able to identify factors that have a significant impact on short term insurance and reinsurance companies’ profitability and the results will be compared to the evidence in the literature.
3.8 VARIABLE SELECTION AND MEASUREMENT

An analysis of earlier studies on the determinants of profitability of short term insurance and reinsurance companies was done to identify explanatory variables in the model that exert strong impact on the insurance companies’ profitability. As a result the following are the details of variables selected.

- **Profitability**
  In this study profit before tax to total assets (ROA) is used as a primary measure of profitability because most of the studies regarding the subject used this ratio to determine the profitability of insurance companies.

- **Age of company**
  This variable is measured by the number of years from the date of establishment.

- **Volume of capital**
  An analysis of earlier studies shows that book value of equity was used as a measure of volume of capital. Similarly, researcher will use book value of equity is taken as a measure of volume capital.

- **Company size**
  Various studies used different measurements of company size such as number of employees and total assets of a company but the most common one used is the log value of total assets as a measure of size in such area. Thus, company size is measured by total assets value of assets.

- **Leverage**
  The amount of debt used to finance a company’s assets. A company with significantly more debt than equity is considered to be highly leveraged. This variable is measured by total debt to total equity value of the company.

- **Liquidity**
  Liquidity from the context of insurance companies is the probability of an insurer to pay liabilities which include operating expenses and payments for losses/benefits under insurance policies, when due and therefore, measured by total current assets to total current liabilities.
After identifying and selecting the explanatory variables to use in the model, the following equation reflecting all the variables has been formulated:

$$ROAi,t = \alpha + \beta_0 Agei,t + \beta_1 Sizei,t + \beta_2 Levi,t + \beta_4 Voci,t + 5LQi,t + \varepsilon_i,t$$

Where:
1. ROAi,t is the profitability of reinsurance company i at time t (dependent variable) where ROA is defined as profit before tax profit over total assets. The major reason for using ROA over other profitability measures like Return on Equity (ROE) is that ROE does not take into consideration the effect of debt and the risks inherent in it as a measure of profitability in reinsurance companies.
2. \(\alpha\) is constant,
3. Age: the age of company at time t, Size: company size will be measured by total assets
4. Lev: This is the leverage ratio and total debt to equity ratio will be used.
5. Voc: is volume of capital and the book value of equity will be used as a measure
6. LQ: Liquidity (Current assets divided by current liabilities)
7. \(\beta_0 \ldots \beta_5\): coefficient of independent variables
8. \(\varepsilon\) is error term.
9. i is insurance companies 1 to 29
3.9 STUDY MODEL

Figure 3.2 Study model

<table>
<thead>
<tr>
<th>Independent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leverage</td>
</tr>
<tr>
<td>Liquidity</td>
</tr>
<tr>
<td>Firm age</td>
</tr>
<tr>
<td>Firm size</td>
</tr>
<tr>
<td>Volume of capital</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profitability of short term insurance and reinsurance companies in Zimbabwe</td>
</tr>
</tbody>
</table>

3.10 STUDY HYPOTHESIS

After reviewing the existing body of relevant and related literatures, the following null hypothesis are formulated for this study in order to make hypothetical answers to the study problem and questions.

**H1**: Age of the company and profitability of short term insurance and reinsurance companies in Zimbabwe are positively related.

**H2**: Size and profitability of short term insurance and reinsurance companies in Zimbabwe are positively related.
**H3**: Any increase in volume of capital will result in an increase in profitability of short term insurance and reinsurance companies in Zimbabwe.

**H4**: Leverage and profitability for short term insurance and reinsurance companies in Zimbabwe are negatively related.

**H5**: Liquidity ratio and profitability of short term insurance and reinsurance companies are negatively related.

### 3.11 CONCLUSION

This chapter covered the approach adopted in the study to examine the impact of the determinants of profitability on short term insurance and reinsurance companies in Zimbabwe, the type of data used and the techniques used in data collection, the sampling mechanism including sample size, the methods utilized to manage and analyze the data, and the process of constructing empirical model with identification and measurement of its components, measurement and selection of variables, expected relations between the dependent and independent variables.
CHAPTER 4: RESULTS AND DISCUSSION

4.1 INTRODUCTION
This chapter presents the findings of the research. The main focus will be a discussion of the results of the linear regression model designed to test the outcomes of the analysis of twenty nine short term insurance and reinsurance companies in Zimbabwe over the five year period from 2009-2013. In this chapter, the data will be presented in the form of tables, charts and descriptive statistics.

4.2 NORMALITY OF DATA
There are four classic assumptions in undertaking the regression analysis and one of them is normality of data (Gujarati, 1995). Other researchers like Brooks (2008) concur and note that in order to conduct hypothesis test about the model parameter, the normality assumption has to be satisfied. According to Almajali et al (2012), normality of data is defined as a range of scores that span either side of zero. The normality assumption states that the mean of the residuals should be zero. Figure 4.1 shows the results from testing the normality of data of the short term insurance and reinsurance profitability from 2009-2013.

Figure 4.1: Histogram [Dependent Variable: ROA]

Source: SPSS Regression Output
When the residuals are normally distributed around the mean of zero the shape of the histogram should be bell-like. From Figure 4.1, the shape of the histogram shows that the residuals are normally distributed around a mean of zero and there is a normal curve which therefore confirms the normality assumption.

Figure 4.2: Normal Q-Q Plot of ROA

Figure 4.2 above also shows that data is normally distributed around the mean of zero which therefore satisfies the normality test assumption.

In the study, the Kolmogorov-Smirnov test was also used to test normality of data as shown in the Table 4.1 below.

Table 4.1: Kolmogorov-Smirnov

<table>
<thead>
<tr>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>.155</td>
<td>29</td>
<td>.075</td>
<td>.962</td>
<td>29</td>
</tr>
</tbody>
</table>

a. Lilliefors Significance Correction

From Table 4.1 above, the p-value for the Kolmogorov-Smirnov test shows that we accept the Null Hypothesis and conclude that the data is from a normal distribution.
4.3 DESCRIPTIVE STATISTICS

This section presents the empirical tests results including the descriptive statistics. From Table 4.2 there are 29 valid cases of or “N” for each variable.

Table 4.2: Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>10.6265</td>
<td>9.8092</td>
<td>29</td>
</tr>
<tr>
<td>FIRM AGE</td>
<td>19.3793</td>
<td>18.84791</td>
<td>29</td>
</tr>
<tr>
<td>FIRM SIZE</td>
<td>8.3006E3</td>
<td>8804.5204</td>
<td>29</td>
</tr>
<tr>
<td>LIQUIDITY</td>
<td>1.0122</td>
<td>.26874</td>
<td>29</td>
</tr>
<tr>
<td>LEVERAGE</td>
<td>1.6973</td>
<td>1.10726</td>
<td>29</td>
</tr>
<tr>
<td>VOC</td>
<td>3.7909E3</td>
<td>5700.47375</td>
<td>29</td>
</tr>
</tbody>
</table>

Source: SPSS descriptive statistics results

From Table 4.2 above, the average profitability as measured by ROA for short term insurance and reinsurance companies in Zimbabwe over the five year period is about 10.6265 whilst the value of the standard deviation for ROA is 9.806. This implies that there are significant differences among values of profitability across the selected short term insurance and reinsurance companies in Zimbabwe used in the study.

Table 4.2 above also shows that the mean value of firm size is 8.3, as measured by the log value of total assets, whilst the standard deviation is 8 804 which implies that there are very significant variations across the selected short term insurance and reinsurance companies used in the study.

The mean value of company age is 19.379 years and the standard deviation is 18.85 which imply that there are significant differences among values of firm age.

The output from SPSS as shown in Table 4.2 above also shows that leverage as measured by debt to equity ratio had a mean value of 1.6973 and the standard
deviation of 1.107. This therefore implies that there are moderate differences among the values of leverage across the sample short term insurance and reinsurance companies under investigation.

The mean value for volume of capital (VOC) as measured by book value of equity is 3.79 whilst the standard deviation was 5,700. Such a high value for standard deviation shows that very significant variations exist among the values of volume of capital across the selected short term insurance and reinsurance companies in Zimbabwe.

The mean value of liquidity ratio is 1.012 whilst the value of standard deviation is 0.2687. This means there are moderate difference among the values of liquidity ratio for the selected short term insurance and reinsurance companies in Zimbabwe.

### 4.4 TEST FOR HETROSKEDASTICITY

According to Brooks (2008), one the assumption for classical linear regression model is that the disturbances appearing in the population regression are homoscedastic meaning the variance of the error term is consistent. However when the errors do not have a constant variance (not homoscedastic), they are said to be Hetroskedastic. In the study standardized residuals were plotted against the standardized values to test for the presence of heteroskedasticity. The results from the plot below shows no pattern which means there is no heteroskedasticity.

**Figure 4.3: Scatter Plot**
The researcher also used white test to test of the presence of hetroskedasticity, which is based on the following null hypothesis and the alternative.

H0: There is no hetroskedasticity
H1: There is hetroskedasticity

The researcher calculated the residual sum of squares for each observation and regressed against the independent variables to check for the existence of hetroskedasticity. The results obtained are as follows;

**Table 4.3: White Test Regression**

Model summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.486&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.236</td>
<td>.070</td>
<td>9.45665</td>
</tr>
</tbody>
</table>

b. Dependent Variable: ROA

*Source: SPSS regression output*

**Table 4.4 Chi Square Calculated**

<table>
<thead>
<tr>
<th>Test</th>
<th>t-Statistic</th>
<th>$\chi^2$ calculated=nR&lt;sup&gt;2&lt;/sup&gt;</th>
<th>$\chi^2$ (5% sig. level)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White’s Test</td>
<td>6.844</td>
<td></td>
<td>14.067</td>
</tr>
</tbody>
</table>

*Source: SPSS regression output*

Using results from the table 4.3 and 4.4 above, the $\chi^2$ square value obtained through calculation is smaller than the value of Chi Square value from the table at 5% significant level. The White Test states that when the value of Chi square calculated is greater than the Chi square tabulated at a given significant level, reject the Ho of no heroskedasticity. Therefore the chi square calculated (t-statistic) as shown in Table 4.4 above is 6.844 and is smaller than Chi square tabulated at 5% significant level which is 14.067. This
means the null hypothesis is accepted as there is no evidence for the existence of heteroskedasticity.

### 4.6 TEST FOR AUTOCORRELATION
In the study, the researcher tested the data for autocorrelation using the Durbin-Watson statistic tests as shown by Table 4.5 below.

**Table 4.5: Test for autocorrelation**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Squared</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.486*</td>
<td>.236</td>
<td>.070</td>
<td>9.45665</td>
<td>.236</td>
<td>1.421</td>
</tr>
</tbody>
</table>

Source: SPSS

According to Keller (2011), the Durbin-Watson statistic tests for autocorrelation in the residuals from a statistical regression analysis and always ranges between 0 and 4. A value of 2 means there is no autocorrelation in the sample. Values approaching 0 indicate positive autocorrelation and values toward 4 indicate negative autocorrelation. In this case the Durbin-Watson statistic is 1.998, indicating no autocorrelation.

### 4.7 CORRELATION ANALYSIS
Correlation analysis measures the strength of the relationship between the variables Weiers (2008). The most common type of correlation coefficient is Pearson r, also called linear or product-moment correlation (Keller, 2011). The level of significance calculated for each correlation is very important as it is a primary source of information with regards to the reliability of the correlation.

Bryman and Cramer (2007) suggested that the significance of a correlation coefficient of a particular magnitude will change depending on the size of the sample from which it
was computed. In this study, the analysis is with regard to significant correlations between the dependent variable and each independent variable was done separately so that the researcher can decide whether to accept or reject the hypotheses. The Table 4.5 below shows the correlations between profitability measured by ROA and the selected independent variables.

**Table 4.6: Correlations between profitability and selected independent variables**

<table>
<thead>
<tr>
<th></th>
<th>FIRM AGE</th>
<th>ROA</th>
<th>FIRM SIZE</th>
<th>LIQ</th>
<th>LEV</th>
<th>VOC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRM AGE</strong></td>
<td>Pearson</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>29</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ROA</strong></td>
<td>Pearson</td>
<td>0.259</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.174</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>29</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FIRM SIZE</strong></td>
<td>Pearson</td>
<td>0.218</td>
<td>-0.246</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.256</td>
<td>0.199</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>29</td>
<td>29</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>LIQ</strong></td>
<td>Pearson</td>
<td>-0.229</td>
<td>0.142</td>
<td>0.005</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.233</td>
<td>0.463</td>
<td>0.979</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td><strong>LEV</strong></td>
<td>Pearson</td>
<td>-0.083</td>
<td>-0.136</td>
<td>-0.052</td>
<td>-0.198</td>
<td>1</td>
</tr>
<tr>
<td>Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.668</td>
<td>0.482</td>
<td>0.79</td>
<td>0.304</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td><strong>VOC</strong></td>
<td>Pearson</td>
<td>0.183</td>
<td>-0.249</td>
<td>.942</td>
<td>-0.013</td>
<td>-0.301</td>
</tr>
<tr>
<td>Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>0.342</td>
<td>0.193</td>
<td>0</td>
<td>0.948</td>
<td>0.113</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
<td>29</td>
</tr>
</tbody>
</table>

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

*Source: SPSS*

From the table above profitability as measured by Return on assets (ROA) is negatively correlated with firm size, leverage (Lev) and volume of capital (VOC) with the coefficient estimates of correlation being -24.6%, -13.6% and -5.2% for firm size, leverage and volume of capital respectively. The descriptive statistics also shows that volume of capital and firm size are strongly correlated with each other with a coefficient of 94.2%.
4.8 HYPOTHESES TESTING USING CORRELATION ANALYSIS

Hypothesis 1: Age of the company and profitability of short term insurance and reinsurance companies in Zimbabwe are positively related.

Table 4.7 correlation between company age and ROA

<table>
<thead>
<tr>
<th></th>
<th>Correlation coefficient (r)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Age</td>
<td>0.259</td>
<td>0.174</td>
</tr>
</tbody>
</table>

*Source: SPSS output*

Form the table above, the SPSS results shows that there is a positive correlation between company age and profitability but the relationship is not statistically significant. Therefore, H1 is not accepted.

Hypothesis 2: Firm size and profitability of short term insurance and reinsurance companies in Zimbabwe are positively related.

Table 4.8 correlation between firm size and ROA

<table>
<thead>
<tr>
<th></th>
<th>Correlation coefficient (r)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company size</td>
<td>-0.246</td>
<td>0.199</td>
</tr>
</tbody>
</table>

*Source: SPSS output*

From the table above, the SPSS results show that that firm size is negatively correlated with profitability but the relationship is not statistically significant. Therefore, H2 is rejected.

Hypothesis 3: Any increase in volume of capital will result in an increase in profitability of short term insurance and reinsurance companies in Zimbabwe.

Table 4.9: Correlation between Volume of capital and ROA

<table>
<thead>
<tr>
<th></th>
<th>Correlation coefficient (r)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume of capital (VOC)</td>
<td>-0.249</td>
<td>0.193</td>
</tr>
</tbody>
</table>

*Source: SPSS output*
From the table above, the results show that that volume of capital is negatively correlated with profitability as measured by ROA but the relationship is not statistically significant. Therefore, H3 is rejected.

**Hypothesis 4:** Leverage and profitability for short term insurance and reinsurance companies in Zimbabwe are negatively related

**Table 4.10: Correlation between leverage ratio and ROA**

<table>
<thead>
<tr>
<th>Leverage ratio</th>
<th>Correlation coefficient (r)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.136</td>
<td>0.482</td>
</tr>
</tbody>
</table>

*Source: SPSS output*

From the table above, the SPSS results show that that leverage ratio is negatively correlated with profitability but the relationship is not statistically significant. Therefore, H4 is rejected.

**Hypothesis 5:** Liquidity ratio and profitability of short term insurance and reinsurance companies are negatively related.

**Table 4.11: Correlation between liquidity and ROA**

<table>
<thead>
<tr>
<th>Liquidity ratio</th>
<th>Correlation coefficient (r)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.14</td>
<td>0.463</td>
</tr>
</tbody>
</table>

*Source: SPSS output*

The results of the table 4.11 show that there is positive correlation between liquidity and profitability but relationship is not statistically significant. Therefore, H5 is rejected.

**4.9 COLLINEARITY STATISTICS**

This section discusses the problem of multi-collinearity using the results produced from SPSS with investigations being done using tolerance value and variance inflator factor (VIF) value. When the tolerance value is insignificant tolerance, it means the variable
under consideration is almost a perfect linear combination of the independent variables already in the equation thus it should not be part of the regression equation. The tolerance values ranges from zero to one and the closer the tolerance value to zero shows a level of multi-collinearity.

**Table 4.12: Collinearity Statistics**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>6.956</td>
<td>10.526</td>
<td>.661</td>
</tr>
<tr>
<td>FIRM AGE</td>
<td>.173</td>
<td>.105</td>
<td>.332</td>
</tr>
<tr>
<td>FIRM SIZE</td>
<td>.000</td>
<td>.001</td>
<td>.269</td>
</tr>
<tr>
<td>LIQ</td>
<td>5.760</td>
<td>7.582</td>
<td>.158</td>
</tr>
<tr>
<td>LEV</td>
<td>-2.259</td>
<td>2.764</td>
<td>-.255</td>
</tr>
<tr>
<td>VOC</td>
<td>-.001</td>
<td>.002</td>
<td>-.638</td>
</tr>
</tbody>
</table>

*a. Dependent Variable: ROA

Source: SPSS

The table above shows that firm size and volume of capital (VOC) have VIF values of 23.09 and 24.81 respectively which indicate presence of collinearity. The researcher then removed volume of capital (VOC) and recalculated VIF values as in Table 4.13 below.

From the table below there is no evidence of collinearity as all VIFs are less than 2.
Table 4.13: Collinearity Statistics (VOC removed)

This is now the model, with VOC removed.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>3.261</td>
<td>.9021</td>
<td>.361</td>
</tr>
<tr>
<td>FIRM AGE</td>
<td>.194</td>
<td>.100</td>
<td>.374</td>
</tr>
<tr>
<td>LIQ</td>
<td>7.777</td>
<td>6.943</td>
<td>.213</td>
</tr>
<tr>
<td>LEV</td>
<td>-.708</td>
<td>1.644</td>
<td>-.080</td>
</tr>
<tr>
<td>FIRM SIZE</td>
<td>.000</td>
<td>.000</td>
<td>-.332</td>
</tr>
</tbody>
</table>

a. Dependent Variable: ROA

Source: SPSS

4.10 INTERPRETATION OF THE RESULTS AND THE REGRESSION EQUATION

Shown below in table 4.3.1 is the empirical result of the study by using random estimators of panel data using SPSS.

Table 4.14: ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>591.375</td>
<td>4</td>
<td>147.844</td>
<td>1.689</td>
<td>.185\textsuperscript{a}</td>
</tr>
<tr>
<td>Residual</td>
<td>2100.996</td>
<td>24</td>
<td>87.542</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2692.371</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), FIRM SIZE, LIQ, LEV, FIRM AGE
b. Dependent Variable: ROA

The $F$-ratio in the ANOVA table tests whether the overall regression model is a good fit for the data. The table shows that the independent variables statistically insignificantly predict the dependent variable, $p > 0.05$ (i.e., the regression model is not good fit of the data).
Thus the Regression Equation

\[
\text{Predicted ROA} = 3.26 + (0.00 \times \text{Firm Size}) + (0.194 \times \text{Firm Age}) + (7.78 \times \text{Liquidity}) - (0.71 \times \text{Leverage})
\]

4.11 SUMMARY OF FINDINGS AND EMPIRICAL EVIDENCE

Firm Age

Based on the regression results above, there is positive correlation but not statistically significant relationship between company age and profitability in Zimbabwe. As shown above in the model, the regression coefficient of company age 0.00 with a t-statistics of 1.95 including significance value of 0.063. Thus from the results, it can be concluded that there exists no relationship between company age and profitability of insurance companies in Zimbabwe and therefore this result is not consistent with the hypothesis of the study.

An analysis of empirical evidence however resulted in inconsistent results some indicating that firm age is negatively related to profitability. For instance, a study by Liargavas and Skandalis (2008) concluded that an older, well-established company is likely to be more proficient in gathering, processing and releasing information when needed because of learning experience. In contrast, a study by Almajali (2012) in Jordan concluded that firm age has no significant statistical impact on profitability of insurance companies. Although the results show no statistical significance between these variables, it can be concluded that the age of a firm shows a positive relationship with profitability of insurance companies.

Firm Size

From the regression model above, there is a negative but insignificant relationship between firm size and profitability in the Zimbabwean short term insurance and reinsurance industry. However, this is inconsistent with results by other researchers from other countries where they found that there exists a positive relationship between size and profitability of firms. For instance, a study by Almajali (2012) in Taiwan concluded that firm size has a significant statistical impact on profitability of insurance companies.
companies. A study by Liargavas and Skandalis (2008) and another by Chen and Wong (2004) supported this finding that the larger firm are more profitable. This is because, these large firms have large resources base, experience staff and sophisticated information systems that result in high profitability. Similarly, Malik (2011) in his Pakistan study found that there is significantly positive association between size of the company and profitability.

**Volume of Capital**

The results show that that volume of capital as measured by book value of equity is negatively correlated with profitability as measured by ROA but the relationship is not statistically significant. This means as more capital is injected profitability actually decreases. The coefficient of the VOC is -0.249 and is not statistically significant at 5% significant level, showing that an increase in volume of capital will result in a decrease in profitability.

Based on empirical evidence, the expectation of the researcher was that the stronger the capital position of the company the better as the company is able to pursue business opportunities more effectively and can deal effectively with unforeseen problems which will ultimately help to achieve increased profitability. Other researchers such as Malik (2011) in Pakistan and Yuqi Li (2007) in the United Kingdom (UK) found that well capitalized insurance companies have higher profits as they have lower costs of borrowing and also they have lower needs for external funding which results in higher profitability.

The results from study on the short term insurance and reinsurance companies in Zimbabwe however seem to indicate that volume of capital is not an important determinant of profitability due to stiff competition among many players in the industry competing in a very small market and where none had an advantage over the other such that profits are shared across several companies. Consequently, this would then have a negative effect on large companies based on volume of capital which have a high costs structure as the little profits would not be sufficient to cover all the costs. On the other hand, for smaller companies (based on volume of equity) which have small costs structures, the profits generated would exceed their costs.
Leverage
The regression results of the study show that there is a statistically insignificant negative relationship between leverage ratio of short term insurance and reinsurance companies in Zimbabwe and profitability with a regression coefficient of -0.71, t-statistics of -0.431 and p-value of 0.671. Thus, the results are consistent with the hypothesis of the study in terms of direction but there is not enough evidence. Available literature on capital structure confirm that a firm’s value will increase up to optimum point as leverage increases and then declines if leverage is further increased beyond that optimum level.

Empirical evidences show that there is a negative relationship between leverage and profitability and the relationship is statistically significant. In a study by Lee (2014) in Taiwan, there is a negative correlation between financial leverage and ROA. The results are also consistent with the results by Elango et al. (2008) which shows that leverage might reduce the amount of capital required by an insurance company to operate viably, but when significantly higher leverage could negatively affect the market value of the company, which consequently reduces the firm’s profit and leading to solvency related problems.

Liquidity
The results above shows that there is positive correlation between liquidity and profitability but the relationship is not statistically significant and the regression coefficient of liquidity was 6.94 with a t-statistics of 1.12 including significance value of 0.274. These results are not consistent with empirical evidence whereby the relationship was negative and statistically significant. For instance, in a research done in Canada by Chen and Wong (2004) concluded that liquidity is an important determinant of profitability of insurance companies though had with a negative relationship. In another study by Neaime et al (2005) liquidity was found to be negatively related with profitability.

The major reason for this unique scenario in the short term insurance and reinsurance industry in Zimbabwe over the five year period from 2009-2013 could be that since the economy adopted multi-currencies, liquidity was so scarce and only those companies which had a better liquidity position got more clients as this would demonstrate ability to
settle claims in the event that they arise. Clients would shun those companies without a strong liquidity base as this would be risky and companies would then aim to hold as much liquid reserves to attract more customers. As a result the level of profitability as measured by ROA increased with the level of liquidity; the higher the liquidity the higher the profits.

4.12 CONCLUSION
This chapter discussed in detail some selected descriptive statistics on the relationship between profitability measured by ROA and selected independent variables such as firm age, firm size, leverage, liquidity and volume of capital. Hypotheses testing were also done on the independent variables with the aim to accept or reject the null hypothesis. Correlation analysis which is used to determine the relationship between dependent variable and towards independent variables was also discussed in the chapter. Finally, the chapter compared the results of the study with empirical evidence by other researchers so as identify similarities and differences. The results of this study are mixed in terms of direction of the relationship between the dependent and independent variables. However all the beta coefficients are not statistically significant and are inconsistent with other research.
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.0 INTRODUCTION

The chapter presents the conclusions and recommendations on the research findings. The main objective of this chapter is to establish the extent to which the research objectives were addressed. This study identified the internal factors that affected the profitability of short term insurance and reinsurance companies in Zimbabwe over a five year period from 2009-2013. The study also attempted to measure the extent to which these internal factors exert an impact on the profitability of short term insurance and reinsurance companies in Zimbabwe. Another objective of the study was to determine the relationship between profitability as measured by ROA and internal factors affecting insurance and reinsurance companies in Zimbabwe. The last section of the chapter provides suggestions for areas that can be further studied in future.

5.1 SUMMARY AND CONCLUSION FROM THE STUDY

Based on the regression results presented in Chapter 4, the results were mixed in terms of direction of the relationship between the dependent and explanatory variables over the five year period from 2009-2013. However all the beta coefficients are not statistically significant and are inconsistent with empirical evidences.

The conclusions drawn from the research findings were as follows:

- The tests done in the study show that there is a positive correlation between company age and profitability in Zimbabwe from 2009-2013, but the correlation is not statistically significant. Thus it can be conclude that there exists no relationship between firm age and profitability of short term insurance and reinsurance companies in Zimbabwe, and this does not support the hypothesis formulated for this study.

Empirical evidence from other countries however shows that firm age was important as older firms had fairly higher profits than younger ones. This could be explained by the unique situation of Zimbabwe where, no company had
significant foreign currency reserves which they could use to beat competition and generate profits when the economy adopted the multicurrency system in 2009. In fact, all the companies (big and small) started to mobilize financial resources at the same time which were scarce and very expensive.

The results from the study also show that there is a negative but insignificant relationship between firm size and profitability in the Zimbabwe short term insurance and reinsurance industry. However, this is inconsistent with available empirical evidence where there is a positive relationship between size and profitability of firms has been established. This also is not in agreement with the hypothesis formulated for this study.

The reason could be that in the Zimbabwe short term insurance there was a large number of players in the industry competing in a very small market where none had an advantage over the other such that profits are shared across several companies. This would then have a negative effect on large companies which have a high cost structure as the little profits would not be sufficient to cover all the costs. However, for smaller companies which have small cost structures, the profits generated would exceed their costs. It could then be concluded that in the Zimbabwean short term insurance and reinsurance industry there are other factors which affect profitability and firm size does not matter.

The coefficient of the volume of capital (VOC) is -0.249 and is not statistically significant at 5% significant level, showing that an increase in volume of capital will result in a decrease in profitability. This means as more equity capital is injected profitability actually decreases and this does not support the hypothesis formulated for this study. This is also inconsistent with various empirical evidence which states that the large the volume of capital of a company the better as the company is able to pursue business opportunities more effectively and can deal effectively with unforeseen problems which will ultimately help to achieve increased profitability.
It however seems the situation in Zimbabwe is unique and the reason could be the same as for the variable “firm size” where there is stiff competition among many players in the industry competing in a very small market and where none had an advantage over the other such that profits are shared across several companies. As a result this would then have a negative effect on large companies based on volume of capital which have a high costs structure as the little profits would not be sufficient to cover all the costs. However, for smaller companies (based on volume of equity) which have small costs structures, the profits generated would exceed their costs.

- Results show that there is a negative relationship between leverage ratio of short term insurance and reinsurance companies in Zimbabwe and profitability but is not statistically significant at 5% significance level with a regression coefficient of -0.71, t-statistics of -0.431 and p-value of 0.671. Thus, the results are consistent with the hypothesis of the study in terms of direction but there is not enough evidence.

Empirical evidence however shows that there is a negative relationship between leverage and profitability and the relationship is statistically significant. The reason for this unique situation could relate to the nature of the debt - it seems the kind of debt used by the short term insurance and reinsurance companies was not resulting in additional profits and not being charged interest as there is no clearly defined direction in terms of the impact of the debt. This is because the leverage ratio is not sensitive to changes in debt or equity. Available literature on capital structure confirms that the value of a firm increases up to optimum point as leverage increases and then declines if leverage is further increased beyond that optimum level.

- Results also show that there is positive correlation between liquidity and profitability but the relationship is not statistically significant and the regression coefficient of liquidity was 6.94 with a t-statistics of 1.12 including significance value of 0.274. However, these results are not consistent with empirical evidence whereby the relationship was negative and statistically significant.
The major reason for this unique scenario in the short term insurance and reinsurance industry in Zimbabwe over the five year period from 2009-2013 could be that since the economy adopted multi-currencies, liquidity was now scarce and only those companies which had a better liquidity position got more clients as this would demonstrate ability to settle claims in the event that they arise. Clients would shun those companies without a strong liquidity base as this would be risky and companies would then aim to hold as much liquid reserves to attract more customers. As a result the level of profitability as measured by ROA increased with the level of liquidity; the higher the liquidity the higher the profits.

5.2 Recommendations

- The results of the study show that over the five year period from 2009-2013, the Zimbabwean short term insurance and reinsurance industry has unique features which are not found anywhere else as the results were mixed and inconsistent with theory and empirical evidence. This now means management and the regulator (IPEC) need to dig deeper beyond what theory and empirical evidence says as these unique results mean unorthodox solutions are needed to increase profitability.

- Management needs to identify those factors which have a positive impact on profitability and focus on those. For instance, empirical evidence shows that liquidity has a negative relationship with profitability which is not the case here in Zimbabwe where the higher the liquidity ratio the higher the profitability.

- In this abnormal environment management also needs to be clear when raising capital for the business that it is not sufficient just to raise the volume of capital for the business. The key factor is the form of the capital; is it cash, quoted shares, buildings or other? The study shows that capital which is injected in form of cash or other liquid assets is more valuable and can help increase profitability than capital added in other forms.
5.3 AREAS FOR FUTURE RESEARCH

This study was an attempt to identify those internal factors that have an impact on profitability in the short term insurance industry such as company age, company size, liquidity, leverage and volume of capital. The study also attempted to investigate the relationship between profitability and those selected internal factors in the Zimbabwean short term insurance industry. Now considering the very important role the short term insurance industry plays in the economy, areas for further investigations should focus on expanding the number of variables used in this study to see if there are other factors which have an impact on profitability than those five used.

Another area for further study could be an assessment of the impact of external factors that affect profitability of the insurance sector. This would help both management and regulatory bodies understand the environment in which they operate in.
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Appendices

Appendix 1: Template for Collecting Financial Data Used For Regression Analysis

Company's Name ..................................................
Year of establishment..........................................

<table>
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<th>Fiscal year</th>
<th>Total Current Assets</th>
<th>Total Fixed assets</th>
<th>Total Assets</th>
<th>Short-term Liability</th>
<th>Long term Liability</th>
<th>Total Liability</th>
<th>Total Capital</th>
<th>EBIT</th>
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Appendix 2: Descriptive statistics

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<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>VIF</th>
<th>Kurtosis</th>
<th>Skewness</th>
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<td>Leverage</td>
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<td>1.06</td>
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<td>1.44</td>
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<td>Firm age</td>
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<td>75.00</td>
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<td>Firm size</td>
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<td>Volume of capital</td>
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<td>992.00</td>
<td>1.12</td>
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Appendix 3: Firm age for short term insurance and reinsurance

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<th>Company</th>
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<td>5 CBZ</td>
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<td>6 Champions</td>
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<td>7 Clarion</td>
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<td>2003</td>
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