UNIVERSITY OF KWAZULU-NATAL

THE IMPACT OF CAPITAL STRUCTURE ON FIRMS' PERFORMANCE: A STUDY OF SOME SELECTED SOUTH AFRICAN QUOTED FIRMS.

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ABSTRACT

This study sought to analyse the impact of capital structure on firms' performance in South Africa, using a case of 136 selected firms on the main Johannesburg Stock exchange (JSE). Statistical multiple regression analysis method was used to test the relationship between two variables, the capital structure being the independent variable and the firms' performance being the dependent variable. To estimate the capital structure variable, financial leverage ratios were used. That is total debt ratio, debt/equity ratio and long term debt ratio. To estimate firm performance, profitability ratio was used, that is, Tobin Q ratio, return on equity (ROE) and return of asset (ROA). Data from January 2000 to December 2014 were extracted from audited published financial statements and analysed. The results from the findings showed a mixed view with mainly ROA indicating a negative relationship with independent variables and ROE showing a positive relationship with independent variables. Therefore, it is recommended that firms need to find the optimum capital structure.

Key words: Capital structure, firms' performance, optimal capital structure, return on equity, return on assets and debt/equity ratio

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

1.1. INTRODUCTION

This chapter presents the background information to the study, statement of the problem, purpose of the study, aims and objectives of the study, research questions, the importance of the study and the limitations of the study.

1.2. BACKGROUND TO THE STUDY

According to Van Horne and Wachowicz (1995:470), "capital structure is the mixture of a firm's fixed long-term financing signified by debt, preferred stock, and common stock equity." However, it is important to note that some scholars like Ebaid (2009), Suleiman (2013), Mesquita and Lara (2003), Simerly and Li, (2000), Gleason et al., (2000), among others, include short term finance, while others exclude it in their capital structure definition. In this study, the researcher does not include short term debt in the definition of capital structure, taking from the view that capital structure is a fixed structure meant to last for at least more than a year. Therefore, by including short term debt, it means we have a capital structure which changes almost every day and therefore makes it difficult for the researcher to analyse such information, given that the firms are only compelled to publicly publish their financial statements yearly.

Employment of various proportion of debt and equity by managers is a ground laying approach employed by firms to improve their financial performance (Gleason, et al., 2000). Managers who are insightful in identifying and deploying the right combination of debt and equity are normally recompensed in the market, because the right debt-equity mix minimizes firm's cost of financing, maximizes net returns and leads to improved competitive advantage in the marketplace.

The relationship between a firm's capital structure and its performance has been an uneasy one and a difficult puzzle to solve in the present and in the history of corporate finance and financial management theory. Both present and late experts in this area have not been able to agree on this issue, which makes it very complex. Modigliani and Miller (1958) were the first researchers in this

area to come up with the theory of capital structure which is now known as the M & M theory. The M&M theory argues that under very constricting assumptions such as perfect capital markets, investors' homogenous expectations, tax free economy and no transactions costs, capital structure is irrelevant in determining the firm's value.

According to this proposition, a firm's value is determined by its real assets, not by the composition mixture of its debt and shares it issues. Furthermore, they suggest that if this proposition does not hold, then arbitrage mechanisms will take place, investors will take a long position on the shares of the undervalued firms and takes a short position on the shares of the over-valued firms in such a way that identical income streams are obtained. As investors seek to exploit these arbitrage opportunities, the price of over-valued shares would fall and that of the under-valued shares would rise, which would result in an equilibrium position where no one would get super-normal profits in share trading.

However, this theory faced many criticisms from many researchers such as Jensen and Meckling (1976), Myers and Majluf (1984), Baker and Wurgler (2002) and some of them are mentioned in the literature review chapter. This was because of its assumptions which are not realistic in the real world. These criticisms forced the M&M to revise their theory in 1963 by incorporating tax benefit and argued that under market imperfection where interest payments are tax deductible, firm value would increase with the level of financial leverage. Despite facing many criticisms from various scholars, the work of M&M managed to bridge a gap in developing the theory of capital structure and this resulted into four other major theories of capital structure namely: the trade-off theory, agency costs theory, pecking order theory and market timing theory.

In the past decades, many scholars from both the developed and developing economies joined the band wagon in trying to solve this puzzle regarding the relationship between leverage level and firm performance. Jensen and Meckling (1976) developed the agency costs theory. According to this theory, the agency problem is caused by a conflict of interest between shareholders and managers (agency cost of equity) or between shareholders and debt holders (agency cost of debt). Suleiman (2013) suggested that the use of debt would reduce the agency cost because the payment of interest reduces the surplus cash. In contrast to trade-off theory, Myers and Majluf (1984) introduced the pecking order theory which unpacks that optimal capital structure does not exist. They argued that to minimise the problem of asymmetric information between managers and

investors, financial pecking order; that is a hierarchy of financing that begins with retained earnings, which is followed by debt and lastly, new stock issues, takes place. Other researchers, Baker and Wurgler (2002) proposed the "market timing theory of capital structure" which suggests that managers can increase current shareholders' wealth by timing the issue of securities.

From the issues discussed above, the most important question from all these theories is whether the capital structure has any significant impact on firms' performance or not. The results from other studies show mixed results and views. Mujahid and Akhtar (2014); Hasan, Bokhtiar, Ahsan, Mainul Rahaman, Afzalur Alam and Nurul (2014); Saedi and Mahmoodi's (2011); Roden and Lewellen, (1995); Hadlock and James (2002) found a positive relationship between capital structure and firms' performance. However, Ebrati, Farzad, Reza and Ghoban (2013); Ibrahim El-Sayed (2009); Gleason et al., (2000) and Simerly and Li, (2000) found a negative relationship. The other aspect of main concern is that most of the literature being used for the study and many researches were carried out in the developed economies which are close to efficient markets and there are many cheap sources of finance. Hence, it motivates the researcher to carry out this study in a developing economy where there is much of asymmetrical information about the stock markets and very limited sources of finances.

1.3 STATEMENT TO THE PROBLEM

The impact of capital structure on firms' performance remains one of the unresolved, disputed and a controversial issue within the field of finance, despite being a source of attention for many researchers. It has also been subjected to many empirical discussions and studies. The problem arises when the management is deciding on how much debt versus equity finance to have in their capital structure, which is more ideal for the firm's performance. Therefore, this leaves the difficult and unanswered question, which is whether the capital structure has any significant impact on the firm's performance or not? The present study tries to determine how much leverage firms should maintain in order to maximise their performance. This research is based on companies registered on the Johannesburg Securities Exchange (JSE) from 2000.

1.4 RATIONALE FOR THE STUDY

Previous studies focused mainly on developed economies, with more developed stock markets where there is very minimal information asymmetry. Therefore, this study sought to investigate whether the theory of capital structure also has an impact on firms' performance in emerging markets, specifically in the South African firms quoted at the JSE.

Moreover, the inclusion of short term debts in the capital structure by other researchers also prompted the researcher to investigate more, since he feels that the results from these studies were distorted. The researcher is of the view that capital structure is a fixed structure meant to last for more than a year. Therefore, including short term debt implies that we have a capital structure which changes almost every day, thereby making it difficult for the researcher to analyse such information since the firms are only compelled to publicly publish their financial statements yearly. Furthermore, the researcher is more passionate about corporate finance, it is therefore worrying to see such a crucial subject in finance remaining unresolved, despite the decades of debates. In that case, the researcher hopes this study might help in resolving the matter.

1.5 PURPOSE OF THE STUDY

The purpose of this quantitative study was to test the theory of capital structure, whether optimal capital structure exist or not, and if it has any significant impact on firms' performance. The independent variable, which is capital structure, has been defined as the mixture of a firm's fixed long-term financing signified by debt, preferred stock and common stock equity (Gitman, & Zutter,2010). The dependent variable, the firms' performance, has been measured by profitability ratios, Tobin Q ratio, return on equity (ROE) and return on assets(ROA).

1.5.1 Objectives of the study

- To study the relationship between capital structures and firms' performance.
- To analyse the impact of capital structure on the firms' performance.
- To determine whether optimal capital structure influences the firms' performance.
- To make recommendations to companies on which forms and level of financing they can use to finance their businesses for them to maximise their returns.

1.5.2 Research Questions

- ❖ Is there any relationship between capital structure and firm's performance?
- ❖ What is the impact of capital structure on the firm's performance?
- ❖ What is the effect of optimal capital structure on firms' performance?
- ❖ What are the main recommendations to firms on which form and level of finance to use when raising capital for their businesses?

1.6. STATEMENT OF HYPOTHESIS

Ho: Null Hypothesis

There is no significant relationship between capital structure and firms' performance.

H1: Alternative Hypothesis

There is significant relationship between capital structure and firms' performance.

1.7 SIGNIFICANCE OF THE STUDY

The findings of this study show that high level of debt shows a negative relationship with firms' performance. The results are also signal that too high levels of equity finance negatively affect the firms' performance as well. Therefore, it is hoped that the results might caution firms to determine the optimal capital structure where they must avoid too much debt or equity finance. Debt finance is not desirable since firms are obliged to pay the interests, whether they make profits or losses. Importantly, the findings of the study might also help investors, senior managers and entrepreneurs in choosing the best capital structure or portfolios with the best composition of debt and equity, in order to maximise their returns.

1.8 SCOPE OF THE STUDY

- The study was based on South African firms which were listed on the JSE at the time of study. Firms which were not on JSE were not considered, since it was very difficult to obtain data from them and they were also not part of the scope. Moreover, the research also examined the implications of raising capital through issuing of stocks, which involves transactional costs and this only affects public companies which trade on the stock market. Again, the research also excludes companies which traded on the JSE for less than 10 years, because the study examined those companies which have been trading for 15 years. This was done in order to obtain results which were almost accurate.

- The research only included the long-term variables on examining the independent variable because short term forms of finance were considered to fluctuate on a daily basis. Therefore, the researcher has the prerogative that it does not truly reflect the actual firms' capital structure.

- The researcher used secondary data, since primary data were not more appropriate in conducting such type of a research. This is because many firms do not divulge information which has to do with their finances.

1.9 LIMITATIONS OF THE STUDY

The study was limited by the time constraint, considering that there was so much data to be analysed. This then forced the researcher to use purposive sampling in selecting the firms for the study. Only secondary data was used. However, this was necessitated by the nature of the research. The researcher is also not formally employed and does not have sponsors to fund the research.

1.10 DISSERTATION OUTLINE

This chapter provided insights into the background of the study, the problem statement, objectives of the study, significance of the study and research constraints on carrying out this research. Chapter two explores literature review on capital structure theory and its relevance to firms' performance. Chapter three is a discussion of the methodology undertaken to answer the research

questions and to achieve the objectives of the study. Chapter four presents the findings of the study based on the data collected. Chapter five is a discussion of the findings, while Chapter six concludes the chapter by highlighting the summary of the study, conclusions based on the study, the implications of the study, recommendations based on the findings, as well as a discussion of areas for further research.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

The previous chapter provided an overview of the study by highlighting what the study is about. This chapter focuses on the relevant literature pertaining to the area of study. It gives insights into what different scholars think about capital structure management and its effects on firms' performance. On literature reviewing in this chapter, the researcher categorised the literature into three. The first section is the influential theoretical studies about capital structure, followed by the most recent influential empirical studies. The third section discusses the conceptual framework.

2.1 THEORETICAL STUDIES

On theoretical studies, the researcher reviews the most famous capital structure theories. These include Modigliani and Miller (1958 and 1963), the Pecking order theory, the tradeoff theory, the free cash flow theory, Signaling theory and the Agency problem theory. These are discussed below.

2.1.1 Modigliani and Miller(MM) theory

It is also known as the irrelevance capital structure theory; the first most famous theory of capital structure was derived from the works of Modigliani and Miller (1958). They suggested that managers and owners of firms are indifferent about their capital structure, because the value of the firm does not depend on its capital structure but its total assets. In order for them to come up with these findings, they made assumptions which were considered unreasonable by their successors in the same research. They assumed a world without taxes, perfect markets and no any transaction costs. These criticisms faced from these assumptions forced Modigliani and Miller (1963) to revise their study and they introduced taxes into their model. The results showed that the value of a firm increases with more debt due to the tax shield and this was also known as the relevance capital structure theory. The MM propositions are important to the rest of the discussion for two reasons. Firstly, the MM theory is a benchmark against which other models are evaluated, since this is a "pure" theory, without most of the "real-life" assumptions. Secondly, it enables the complete

separation of investment and financing decisions (of course, only when the MM assumptions hold) and allows a firm to use capital budgeting procedures without being concerned about the source of funds. It is also important to examine the MM according to the periods and the circumstances through which firms in USA were going.

- **Aggregate financing patterns in firms in the USA**: Brigham and Gapenski (1990) examined the financing patterns of U.S. corporations over the period 1901 to 1979 and found that debt financing saw a major increase over the post-World War II period and reached a maximum in the 1960s and 1970s. Since then, this has tapered off to become comparable with the pre-war period. Secondly, short-term liabilities are being increasingly used; also, the number of new issues of equity has declined (Martin, 1988: 370). It is interesting to note the break-up of the aggregate financing pattern for the period 1980-1984: total debt was 36% of total finance, new stock issues, -2% and gross internal funds, 66%. Out of the debt, long term debt was only 10% of total finance and short-term liabilities were 26%, mainly comprising short-term market debt at 15% of the total. The MM theory cannot explain this mismatch of trends in debt financing found by these researchers.

Furthermore, Copeland (1988:497) notes that there are cross-sectional regularities in the observed capital structures of U.S. firms. "For example, the electric utility and steel industries have high financial leverage, whereas service industries like accounting firms or brokerage houses have almost no long-term debt." The MM theory predicts randomness in the capital structure and cannot account for these cross-sectional regularities.

- **Belief of executives in optimal capital structure**: Clarke et al, (1988: 167) found that over 90 percent of the executives who responded to a questionnaire believed that an optimal capital structure exists at which the cost of capital is minimised. This belief contradicts the MM theory and there must be some better explanation than that these executives were irrational

- **Target debt ratio:** The study by Scott and Johnson (1982) also found that the largest United states of America (USA) companies used a target debt or leverage ratio to make financing decisions. This targeted leverage varied between 26 and 40 percent for different companies. However, there was no consensus on the target ratio and each company uses its own (Clarke et al, 1988: 167). It is seen that firms use a variety of methods to determine a target debt ratio.

Firstly, they use external analysis, by comparing their capital structure to other companies operating in the same or similar industries. They assume that companies in the same industry have similar assets, face similar operating risks, are of similar size and consequently, require a similar level of debt. But this method has been criticised as leading to costly misjudgements. "The financial difficulties experienced by companies such as International Harvester and Caterpillar suggest that ratios based on comparison to other companies may not be suitable " (Clarke et al, 1988: 175).

Another important study by Scott and Johnson cited above, found that managers commonly take recourse to internal analysis (Clarke et al, 1988:167). This can include Earnings before interest and tax (EBIT) and earnings per share (EPS) analysis, cash flow and capability to service debt, probability of insolvency analysis, determination of effect of capital structure on share prices through regression analysis and survey of analysts and investors (Van Horne, 1995: pp.359-375). Due to the above explanation, it is important to note that the financing decision is not irrelevant in practice. There must be important aspects in determining capital structure which were not considered in the MM analysis. The next section reviews a broad overview of some of these elements.

2.1.2 Trade-off theory

The trade-off theory was a modification of Modigliani and Miller's models and was meant to reflect financial distress and agency costs. The optimal capital structure is found by balancing the tax shield benefits provided by leverage against the costs of financial distress and agency costs, so the costs and benefits of leverage are traded off against one another. This theory postulates that highly profitable firms have more debts repayment capacity with high taxable income to shield, so that they will have higher debt to equity ratio compared to low profits firms. The higher profitable firms use more debt due to lower bankruptcy probability and higher debt ratings, while in the contrary, the pecking order theory implies that firms with higher profits use less debt as they have more retained earnings to finance their operations and new projects (Kale, 2014, 2013).

2.1.3 Pecking Order Theory

Myers and Majluf (1984) proposed the pecking order theory to suggest that optimal capital structure does not exist. They argued that to reduce the problem of asymmetric information between firms' managers and investors, financial pecking order, that is a hierarchy of financing that begins with retained earnings, which is followed by debt and finally, new equity issue, takes place. Drawing from these facts, Iavorskyi (2013) concluded that firms which are very profitable and generate sufficient cash flows use less debt finance.

2.1.4 Signalling theory

Due to the asymmetric information that exists between management and shareholders, signals are vital for financing in a company, the high-quality firms use more long-term debt and have higher leverage as a signal of future profitability (Ross, 1977). In order to separate the good profitable firms from the low-quality firms, 'the lemons', the quality firms will go for high debts and thus, attracting scrutiny, while the low-quality firms cannot be able to simulate because with scrutiny, they will be discovered.

The signalling theory argues that most financial decisions taken by firms' senior management are designed to signal management's confidence in the future profitability of the firm to the stock market and also its ability to meet future obligations. The action of adding more debt is a sign of higher future cash flow expectations. This theory has faced a lot of economic challenges, the information asymmetry between management with the insider information and investors and lenders with no such information. The wrong signals may lead to moral hazard as managers are not likely to bear the costs of the risks which will be borne by the shareholders and adverse selection where banks/debt holders will have to charge high interest rate and insurance costs to cover up from potential losses.

2.1.5 The Agency Problem theory

Further studies of this relationship include the works of Jensen and Meckling (1976) and Myers (1977). They suggested that agency costs are related to conflicts of interest between stakeholders: mainly managers, creditors and shareholders. They gave two scenarios of agency problem, with the first one being conflict between managers and shareholders. They argued that it normally arises when managers do not own shares or have few shares. Therefore, they become unwilling to perform their best in order to maximise firm value, which is a best interest of shareholders.

According to Jensen (1986:45), the "benefit of debt as a restriction of managerial discretion and stated that the problem is how to motivate managers to retain the cash rather than invest it below the cost of capital or waste it on organizational inefficiencies". Managers of low-indebted firms are motivated to devote cash flows more freely, therefore taking less productive projects and generates lower returns. Contrary, when a company has debt in its capital structure, managers are committed to make interest payments, thus, having less free cash flow left and choosing a more effective way to distribute these cash flows. To add on that, Harris and Rajiv (1988) also claimed that managers tend to act in their own interests by having high leverage as a way of preventing takeovers. Firms with a large portion of debt in their capital structure are viewed as at less risk to hostile acquisitions. Therefore, managers do not like hostile takeovers, since it might result in them losing their jobs or positions.

The second form of agency problem is between shareholders and debt holders. This form of problem is caused by ideological differences between stockholders and debt holders. The former are more risk takers by nature and they want higher returns, whereas the latter are risk averse and they want guaranteed return even if it is lower. Hence, shareholders may want to take projects with higher risk than debt holders would prefer. In the case of success of these projects, stockholders will earn extra return, while in the case of failure, all losses will be between debt holders and stockholders (Jensen and Meckling, 1976). Consequently, more indebted firms take lower-risk projects. On the same hand, Myers (1977) showed that discrepancies in goals between debt holders and shareholders could lead to under-investment, thus, higher leverage might as well lead to poor corporate performance.

2.1.6 Bond Indenture Provisions and Bond Rating Agencies

Partly arising from the existence of agency costs and partly because information asymmetry, this determinant which has no theoretical rigour is often found to play an important role in determining capital structure. Empirical evidence shows that bond indenture provisions can, apart from restricting the issue of new debt, also restrict dividend. Some covenants might restrict mergers and even investment decisions. Obviously, all these restrictions go towards the determination of capital structure. There is also a possibility that the ratings by bond-ratings influence firm value. However, this has been discounted by evidence from Weinstein (1978), since capital markets quickly absorb the relevant news months before the bond rating agencies change their ratings.

The models and evidence outlined above shows the complexity of capital structure determination. Myers entitled his address to the American Finance Association in 1983, "The Capital Structure Puzzle", which aptly describes the prevailing situation. The basic question of whether a firm's financing decisions impact on its value remains unresolved. Evidence on capital structure is difficult to reconcile. As Copeland and Weston, (1988:256) point out, "A great deal of work needs to be done before a consensus about the effect of capital structure on the cost of capital will be reached" (Copeland, 1988: 459). "Thus, the present consensus on this issue in the financial literature appears to indicate that the determinants of a firm's capital structure are still subject to debate and require further empirical investigation" (Martin,1988: 379).

2.2 EMPIRICAL STUDIES

There are several empirical research papers which were presented regarding this matter. Many scholars from both the developed and developing economies have since joined the band wagon in trying to solve this puzzle regarding the relationship between leverage level and firm performance. In this research the author defines the term developed economy as a country with a relatively high level of economic growth, more security for investments which means low risk and a very efficient debt and equity capital markets. Mainly economic growth is measured by per capital income, that is, gross domestic product (GDP), level of industrialization, general standard of living and the amount of widespread infrastructure. The most well-known current examples of developed countries include the United States, Canada, Australia and most of western Europe, including the United Kingdom and France.

Furthermore, the researcher defines developing economy as country with a relatively low level of economic growth, less security for investments due to high levels of risk in the debt and equity capital markets. The examples of developing countries are African countries including South Africa, Nigeria, Kenya, Egypt, among others. Countries such as Bangladeshi, Ukraine, Pakistan and others are also developing countries.

Myroshnichenko (2004), Zheka (2010) and Talavera (2011) considered leverage as a dependent variable and studied its determinants. They found that in Ukraine, the pecking order theory holds for short-term financing, while the trade-off theory holds for long-term financing.

Grechaniuk (2009) studied the relationship between firms' leverage measured by debt to equity ratio as independent variable and ROA as dependent variable and discovered that ROA and debt-to-equity ratio have a negative relationship. All these studies aimed to find out which factors affect a choice of debt level. Still, to the researcher's knowledge, there were no studies about the effect of leverage on firm performance controlling for other performance determinants. Besides, it is worth differentiating long and short-term debt as those with different risk-return profiles, as well as investigating the relationship between leverage and firm performance across different industries in different economies.

Saedi and Mahmoodi's (2011) study examined the relationship between capital structure and firm performance. They used a sample of 320 firms listed on Tehran Stock exchange over the period 2002- 2009. Except all of the financial companies, the study used four performance measures which are ROA, ROE, EPS and Tobin's Q as dependent variables and three ratios to show capital structure which are: long- term debt, short – term debt and total debt ratio as independent variables. The study indicated that firm performance, which is measured by EPS and Tobin's Q, is significantly and positively associated with capital structure, while reported a negative relationship between capital structure and ROA and no significant relationship between ROE and capital structure.

Ebrati, Farzad, Reza and Ghoban (2013) empirically investigated the impact of capital structure on firm performance and used multiple regression analysis to estimate the relationship between the leverage level and firms' performance. Their findings indicated that firm performance, which is measured by EPS & ROA, is negatively related to capital structure. These findings are in contrast with that of Saedi and Mahmoodi (2011) above, who revealed a positive relationship between firm performance and capital structure. Moreover, they found that independent variables are extremely related to ROA based on the Adjusted R-square value (Ebrati et al., 2013).

On the same subject, Chowdhury and Chowdhury (2010) investigated the relationship between capital structure and firm value in Bangladesh. They considered share price as proxy for value and different ratios for capital structure decision. The interesting finding of this study suggests that maximising wealth of shareholders requires a perfect combination of debt and equity, whereas the cost of capital has a negative correlation in this decision and it should be as minimum as possible. Moreover, according to their findings, it shows that by changing the capital structure composition, a firm can increase its value in the market. Nonetheless, this could be a significant policy implication for finance managers, because they can utilise debt to form optimal capital structure to maximise the wealth of shareholders (Chowdhury and Chowdhury, 2010).

In their study, Mujahid and Akhtar (2014) concluded that capital structure of the firms has a significant positive impact on the firms' financial performance and shareholders' wealth. They arrived to this conclusion after they did the regression analysis on 6 years' data from 2006 to 2011 of overall textile sector including 155 firms to analyse the impact of capital structure on the firm's financial performance and shareholders' wealth in textile sector of Pakistan. Moreover, they used ROE and ROA ratios to measure firms' performance and EPS ratio as shareholders' wealth measure to check the affiliation between capital structure of the firms and their shareholders' wealth (Mujahid and Akhtar, 2014).

Another important study was carried in Bangladesh, a developing economy, by Hasan, Bokhtiar, Ahsan, Mainul Rahaman, Afzalur Alam and Nurul (2014). Their main aim was to examine the influence of capital structure on firms' performance using a sample of 36 Bangladesh firms for the period 2007–2012. The results of their study revealed that the firm's performance as calculated by EPS, is significantly positively linked to capital structure as measured by STDTA. In contrast, EPS was significantly negatively related to LTDTA, while EPS has insignificant relationship with TDTA. Surprisingly, they found no statistically significant relationship between ROE and capital structure. On the other hand, they found a very statistically significant relationship which exists between ROA and capital structure, that is, ROA has significant negative relationship with all debt levels (STDTA, LTDTA & TDTA). Lastly, their findings indicated that there is no statistically significant relationship between Tobin's Q and capital structure. They concluded that capital structure has negative impact on firms' performance. That is, the more the debts incorporate in the capital structure, the less the firm's performance and vice versa. Even though, these findings are

in contrast to trade-off theory, however, there are in consistent with the proposition of Pecking Order Theory as developed by Myers and Majluf (Hasan et al., 2014).

Furthermore, Nirajini and Priya (2013) examined to what extend does capital structure impact on financial performance of companies and whether the capital structure impacts on financial performance of listed trading companies in Sri Lanka. Their correlation analysis showed that debt asset ratio, debt equity ratio and long term debt, correlated with gross profit margin, net profit margin, ROCE, ROA & ROE at significant level of 0.05 and 0.1. Therefore, they concluded that there is a positive relationship between capital structure and financial performance. Lastly, they recommended that every firm should make good capital structure decision to earn profit and carry on their business successfully (Nirajini and Priya, 2013).

According to Kale (2014), there is a significant negative relationship between leverage and return on assets. The result is also buttressing that profitable firms use pecking order theory in their financing. The more profitable a firm is, the more likely it is going to reduce its debts, hence, internal financing is preferred. The findings from her Tobin's Q model indicated that large firms have a positive insignificant relationship between financial leverage and firm performance, while the older firms showed an increase in their market value; this is an indication of investors' confidence on the older firms who have built their reputation over a long period (Kale, 2014).

The other most popular empirical study is that of El Sayed (2009). The study sought to investigate the relationship between capital structure and profitability of listed firms on the Ghana Stock Exchange (GSE) during a five-year period. He used Regression analysis in the estimation of functions relating the return on equity (ROE), with measures of capital structure. The results of this study revealed a significantly positive relationship between the ratio of short term debt to total assets and ROE. However, a negative relationship between the ratio of long-term debt to total assets and ROE was found. With regards to the relationship between total debt and return rates, the results showed a significantly positive association between the ratio of total debt to total assets and return on equity (Ibrahim El Sayed, 2009).

Shah (2014) examined the impact of capital structure on the performance of cement companies listed on the Karachi Stock Exchange during the period 2009-2013. The author hypothesised that there is a negative relationship between capital structure and firm performance. To examine the

association, the author ran a Pearson correlation and multiple regression analysis. The results of the study revealed a strong negative relationship between debt to asset and firm performance variables (GPM, NPM, ROA and ROE). Furthermore, they found a positive relationship between debt to equity and firm performance variables (GPM and NPM) and a negative relationship between debt to equity and firm performance variables (ROA and ROE). Moreover, capital structure variables significantly impacted on firms' performance. However, the study concluded that financial analysts and managers should emphasise on the optimal level of capital structure and efficient utilisation and allocation of resources to achieve the targeted level of productive efficiency in business (Shah, 2014)

Lastly; Akeem, Terer, Kiyanjui, Kayoed and Matthew (2014) examined the effect of capital structure on firm's performance, with a case study of manufacturing companies in Nigeria from 2003 to 2012. The purpose of the study was to provide a critical appraisal of the need and importance of capital structure. They employed descriptive and regression research technique to consider the impact of some key variables such as ROA, ROE, total debt to total asset, total debt to equity ratio on firm performance. They found that capital structure measures (total debt and debt to equity ratio) are negatively related to firm performance. They also recommended that firms should use more of equity than debt in financing their business activities, in as much as the value of a business can be enhanced using debt capital. They also advocated for the establishment of the optimal capital structure, although they did not make it clear on how to do it (Akeem et al., 2014).

2.3 CONCEPTUAL FRAMEWORK

Barth et al. (2008:1168) argue that conceptual framework changes over a period, while ideas changes frequently. This means that knowledge of the framework is more crucial than the ever-changing results from theories. Christensen and Demski (2003) suggest that conceptual framework is a coherent system of interrelated objectives and fundamentals that can lead to consistent theory and that prescribes the nature, function and limits of the subject matter. The conceptual framework is an attempt to provide a meta-theoretical structure (Christensen et al, 2003).

The main objective of this study was to examine the influence of capital structure on firms' performance. In this study, three dependent variables, that is Tobin Q ratio, return on equity (ROE) and return on asset (ROA), were used as the representative of firms' performance measures. ROE is an important profitability ratio that is defined as net profit after tax divided by total equity. ROA is calculated as net profit after tax divided by total assets. The Tobin's Q ratio is a ratio devised by James Tobin of Yale University, who hypothesized that the combined market value of all the companies on the stock market should be about equal to their replacement costs. The Q ratio is calculated as the market value of a company divided by the replacement value of the firm's assets.

$$\text{Q Ratio} = \frac{\text{Total Market Value of Firm}}{\text{Total Asset Value}}$$

On the other hand, three independent variables were used, that is, the debt/equity ratio (DE), this measures the ratio between debt and equity. Long-term debt to total assets ratio (LTDTA), this measures the ratio between long-term debt to total assets. Specifically, it aims to measure the ratio of long term debt in financing the assets of a firm. Lastly, it is total debt to total assets (TDTA), this measures the ratio between total assets and total debt. These are the variables which were used as the representative of capital structure. In addition, the size of the firm (Size), which is determined by logarithm of total assets, was also considered as controlled variable. The conceptual framework is presented in a schematic interpretation as shown in figure 2.3.

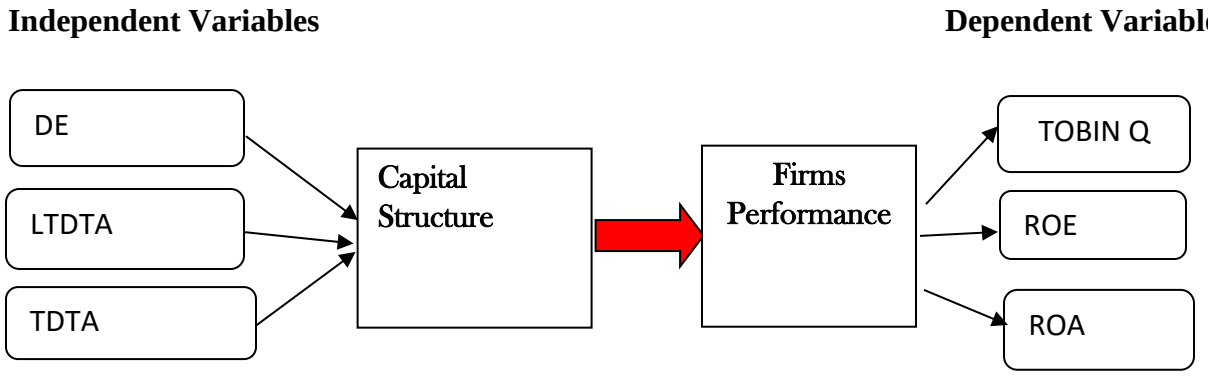

Figure 2.3: Conceptual framework for the study

Source: Author

The above diagram it shows the independent variables that is DE, LTDTA and TDTA as determinants of capital structure. The dependent variables that is Tobin Q, ROE and ROA.

2.4 SUMMARY

This chapter presented insights into different views on the level of debt and equity in the firm's capital structure. The reason for exploring the literature was to try and establish if indeed capital structure has any influence on the firms' performance. By reviewing the above literature, the researcher noticed that all the previous researchers came up with different results, which means there is no consensus regarding this matter. Moreover, the researcher also noted that previous researchers used different variables in examining this relationship. the following chapter is on research methodology, where the researcher discusses how data were collected in order to answer the research questions. The study is based on South African firms which were listed on the JSE at the time of study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 INTRODUCTION

The purpose of this chapter is to explain the methods of gathering data used in this research. Preliminary desktop research was undertaken to enable the research questions to be answered. This enabled a quick and economic way of seeking to establish the facts about capital structure, that is, the composition of debt and equity and its influence on the firm's performance. In that view, this chapter discusses the research methodology used and provides the rationale for choosing it. The research design is also discussed. This includes the research strategy, the target population and sampling strategy, as well as the data collection tools. In addition, the ethical considerations, the limitations of the study, aspects of validity and reliability are also discussed in this chapter.

3.1 RESEARCH DESIGN

This is the master plan that specifies the methods and procedures for collecting and analysing information. Taylor (1996) defines research design as the deliberate planned arrangement of conditions for analysing and collecting data in a manner that aims to combine relevance to the research. Moreover, according to Sekaran and Bougie (2013: 66), research design entails the "blue print for the collection, measurement and analysis of data based on the research questions of the study". In this study, the researcher employed all the three main research designs, that is, exploratory, descriptive and causal studies. By carrying out a descriptive research, the author makes great effort to represent and describe subjects more accurately.

However, the researcher did not only end up by describing variables under study, but he linked, explained the subjects and showed the relationship among components, thereby making the study more suitable to employ causal study. In employing exploratory research, the researcher looked deeply in adding more information to develop new viable theoretical framework into well-known existing facts.

3.1.1 Research Strategy

According to Lincoln (2005), the plan that is built and followed by a research to answer the research questions indicates research strategy. The researcher thus established a list of nine strategies that a research can pursue: experiment, case study, action research, archival, grounded theory, ethnography, narrative inquiry and mixed methods strategy. Each of strategies best fit one or some studies, therefore, none of them is better than others.

An experiment research is the researcher's attempt to investigate the causal relationship between variables, whilst an action research often involves more natural, participatory, helps oneself gain practical knowledge. In a grounded theory research, the author attempts to build hypotheses from gathered data, and then use historical studies to test them (Strauss and Gay, 1996). A case study research is known as a deep investigation into a single object. Meanwhile, the inductive strategy ethnography puts and observes the reality through perspective of the research objects.

In this study, the researcher employed a mix of two strategies, namely archival and experiment strategies. Archival strategy was used because all raw data were extracted from public audited financial statements from 2000 to 2014. Moreover, experiment strategy was being used to create a hypothesis, data analysis and causal relationship verification.

3.2. TARGET POPULATION

Thiertart et al. (2001) defined target population as one for which study results will be generalized through statistical inference, while the study population is one that is operationalized in order to have a clear criterion to determine the elements that have been included or excluded in the study. Furthermore, Cooper and Schindler (2008) define population as the total elements upon which inferences can be made from, while Mugenda and Mugenda (2003) describe it as the population of individuals, events or objects having common observable characteristics. Tull and Hawkins (2008) define it as the group a researcher wants to generalize or learn about. Sample in this research, referred to a smaller set chosen from the larger set. while the population referred to the larger set and in this case, it is all companies listed on the JSE at the time when the research commenced.

In emerging economies like South Africa, to conduct a research of this nature is very difficult because data are not easily accessible. This study only considered firms listed on the JSE. A total of 402 companies from different sectors were listed in the JSE as of 31 December, 2014.

3.2.1 Sampling Design

Sampling refers to the selection of some elements of the population that would help the researcher to draw conclusions about the entire population. Cooper and Schindler (2008) argued that sampling is beneficial because it lowers research costs, improves accuracy and speeds up data collection and availability (Cooper and Schindler, 2008).

In this study, the researcher excluded newly listed firms and those which had been suspended for more than 3 years during the period of 2000 to 2014 financial years, since they would make the model to be inconsistent. Furthermore, other firms were also eliminated due to the unavailability of data. It is also important to note that the researcher excluded the financial sector, considering that most of the assets of firms in this sector are leveraged in other sectors of production. For example, they trade using financial instruments such as derivatives which derive their value from the underlying assets from mining, agricultural and manufacturing such as gold, meat and so on. Moreover, they keep some of their financial information off balance sheet through a process called special purpose vehicle (SPV).

Furthermore, the financial sector is more regulated and financial institutions are required by the legislation to be financed in a certain way and in some instances, they are forced to keep a certain ratio between debt and equity. Due to these reasons, the researcher found it fit not to include them in his sample, but it was rather more suitable to use non-probability sampling, that is, purposive sampling.

3.2.2 Sample Size

Merriam-Webster (2007) defined sample as a finite part of a statistical population, whose properties are studied to gain information about the whole population. While Thietart et al. (2001) defined a sample size as the set of elements from which data is collected, Sekran (2000) argued that the appropriate sample size for research should be large than 30. In this study, 136 companies out of 402 were studied.

3.3 SOURCES OF DATA

This study relied on secondary data. The data were extracted from secondary sources; that is, annual audited financial reports of the selected firms between the period of 2000 and 2014.

3.3.1 Data Analysis

Once data had been collected, the following procedures were followed to analyze it. Data were coded in excel and key variables summarized. The output of data from excel was transferred to data analysis software known as STATA. STATA is listed by the developers STATA (2010) as a general purpose statistical package created in 1985 by StataCorp. It is used by many business and academic institutions and its capabilities includes data management, statistical analysis, graphics, simulations and custom programming and can be operated both by windows, Mac OSX, Unix and Linux. STATA has advantages over SPSS in that it allows for some amount of programming to cater for some arguments which are not available in other packages.

Output from STATA such as descriptive statistics and inferential statistics were used on the regression models to generate the final output. Regression analysis used in STATA can be defined as techniques for modeling and analyzing several variables when the focus is on the relationship between the dependent variable and one or more independent variables (Freedman,2005). This technique is not only based on prior literature on this kind of analysis, but it also has the capabilities of bringing out the nature of the relationship between the variables under investigation.

3.3.2 Models Used for Data Analysis

To investigate the influence of capital structure on the firms' performance, this study used pooling panel data regression models. The basic pooling panel data ordinary least square (OLS) regression model is given below:

$$\mathbf{Yit = \alpha + Xit\beta + \varepsilon it \text{ Here, } i = 1, 2\ldots N; t = 1, 2\ldots T}$$

Where; Yit is the dependent variable (firms' performance) of firm i in period t. Xit is the independent variable (capital structure) of firm i in period t. β is the regression coefficient and εit

is the error term. Nonetheless, using the following regression models, this study examined the influence of capital structure choice on firms' performance:

a) $Tobin_{it} = \alpha_{it} + DE_{it}\beta_0 + Size_{it}\beta_1 + \varepsilon_{it}$ (1)

b) $Tobin_{it} = \alpha_{it} + LTDTA_{it}\beta_0 + Size_{it}\beta_1 + \varepsilon_{it}$ (2)

c) $Tobin_{it} = \alpha_{it} + TDTA_{it}\beta_0 + Size_{it}\beta_1 + \varepsilon_{it}$ (3)

d) $ROE_{it} = \alpha_{it} + DE_{it}\beta_0 + Size_{it}\beta_1 + \varepsilon_{it}$ (4)

e) $ROE_{it} = \alpha_{it} + LTDTA_{it}\beta_0 + Size_{it}\beta_1 + \varepsilon_{it}$ (5)

f) $ROE_{it} = \alpha_{it} + TDTA_{it}\beta_0 + Size_{it}\beta_1 + \varepsilon_{it}$ (6)

g) $ROA_{it} = \alpha_{it} + DE_{it}\beta_0 + Size_{it}\beta_1 + \varepsilon_{it}$ (7)

h) $ROA_{it} = \alpha_{it} + LTDTA_{it}\beta_0 + Size_{it}\beta_1 + \varepsilon_{it}$ (8)

i) $ROA_{it} = \alpha_{it} + TDTA_{it}\beta_0 + Size_{it}\beta_1 + \varepsilon_{it}$ (9)

Where, $Tobin_{it}$ (Tobin Q ratio), ROE_{it} (Return on equity), ROA_{it} (Return on asset) and are financial performance indicators for firm i in year t. DE_{it}, $LTDTA_{it}$ and $TDTA_{it}$ indicate short-term debt, long-term debt and total debt to total asset ratios for firm i in year t, respectively. $Size_{it}$ denotes natural logarithm of total assets for firm i in year t, which is a controlled variable in the models. And α, β_0 and β_1 are regression coefficients and ε_{it} is the error term. However, STATA software was used to perform all the statistical computations necessary for this study.

3.4 VALIDITY AND RELIABILITY OF DATA

Validity refers to the degree to which a study accurately reflects or assesses the specific concept that the researcher is trying to measure. While reliability is concerned with the accuracy of the actual measuring instrument or procedure, validity is concerned with the study's success at measuring what the researchers set out to measure (Saunders and Rojon, 2014). Researchers should be concerned with both validity and reliability to ensure that research results and findings are more accurate.

3.4.1 Validity of Data

According to Saunders and Rojon (2014: 4), a method is valid when the procedure or procedures used to collect the data accurately measure what they are intended to measure and successively; the analysis is appropriate for the data collected and the findings. Researchers should be concerned about both external and internal validity. External validity refers to the extent to which the results of a study are generalizable or transferable. Internal validity refers to one, the rigor with which the study was conducted, for example, the study's design, the care taken to conduct measurements and decisions concerning what was and was not measured and two, the extent to which the designers of a study have considered alternative explanations for any causal relationships they explore (Huitt, 1998).

This study used secondary data, the researcher used data from audited financial statements, which means that this data were verified by experts and it was valid. In addition to ensure that the model was valid, the researcher used different methods as follows: In panel data analysis, many authors used only pooled ordinary least square (OLS) estimation model. But, the problem with this model is its failure to control for time-invariant firm specific heterogeneity that is unobserved fixed effect. Therefore, the model may produce partial and biased results.

On the other hand, fixed effects model has also limitation as it assumes that each cross-section's intercept does not vary across time. Since each of the pooling models has limitations, it would not be correct to use only one model. However, in this study, the researcher used three different pooling models; that is, pooled OLS model, fixed effects model and random effects model. To facilitate the choice of suitable pooling models, the researcher used the F-test and Hausman test. At first, F-test was run to choose between pooled and fixed effects models. After that, Hausman test was applied to select between a fixed or random effects specification.

3.4.2 Reliability of Data

Reliability is the extent to which an experiment, test, or any measuring procedure yields the same result on repeated trials. Without the agreement of independent observers able to replicate research procedures, or the ability to use research tools and procedures that yield consistent measurements, researchers would be unable to satisfactorily draw conclusions, formulate theories, or make claims

about the generalizability of their research. In addition to its important role in research, reliability is critical for many parts of our lives, including manufacturing, medicine and sports (Huitt, 1998).

In this research, to ensure that results are reliable, the author collected audited data, which means all procedures used in calculating the variables by all these companies were the same, since companies are required to follow same accounting and financial reporting standards. Moreover, suspended companies and those without enough data for three years within the research period were excluded, this was done to maintain consistency in both data collection and the methods used. Moreover, to guarantee more reliability of results and findings, the researcher tested hetero-scedasticity in the model, using White and Wald test. Durbin Watson statistic test is also used to test auto-correlation in the regression model. Moreover, to test the stationarity of all the variables, Levin, Lin and Chu (2002) test was also used by the researcher

3.5 ETHICAL CONSIDERATIONS

Gillespie (2009:9) argues that ethical codes in research stipulate areas of responsibility to participants, colleagues, professional associations and sponsoring agencies, the public at large or society (Saunders et al.,2007:153) argues that research ethics relate to gaining access, collecting data, processing and data storage and writing up the research findings in a moral and responsible way. Resnik (2010: 67) listed over ten ethical items based on various codes that hinge on honesty, objectivity, integrity, carefulness, openness, respect for intellectual property, confidentiality, responsible publication, respect for colleagues, competence and legality, among the issues to observe.

In this research, data were collected from the JSE. Consumers of this report included the investors, managers, academics and other various stakeholders who would find it interesting. For consumers of these findings, it is imperative that care is taken to ensure that the findings and disclosures do not result in misconceptions, as a result of inadequate consent, errors in findings and or manipulation of results. For this research to attain ethical standards, due care has been exercised to observe codes as listed by Resnik (2010). The researcher also ensured that data collection, analysis and dissemination were in line with all ethical requirements. Other issues that were taken into consideration included thankfulness, confidentiality, anonymity and respect for all the participants.

In order to realize strong ethical standards and minimize any negative impact, deontological ethical philosophy was deemed suitable since it argues that the ends served by the research can never justify the use of research which is unethical and any deviations from these standards are to be approached judiciously. Finally, no social tie or reference is intended based on race, religion, gender or sexual orientation and any reference to such matters are purely within the context of the research.

3.6. SUMMARY

This chapter dealt with the research design, sample size and data collection methods. As mentioned, the methods adopted allowed for the attainment of the overall objective to solve the research problem. The next chapter presents and analyses the data obtained in this section, to give meaningful decision making information for the research problem.

CHAPTER FOUR

PRESENTATION OF RESULTS

4.0 INTRODUCTION

This chapter presents the results of the study, based on the methodology used. The researcher used statistical models as explained in Chapter Three, to analyse the collected data using the stata software. The analysis of the data takes the form of descriptive statistics and inferential statistics, that is, correlations and regressions.

4.1 DESCRIPTIVE STATISTICS

Descriptive statistics helps to show or describe the summary of data in a meaningful simple way. Table 4.1 shows the summary of the descriptive statistics, which helps to mainly summarise the mean and standard deviation of both independent and dependent variables in this research.

Table 4.1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
returnonas~s	2047	12.68105	16.04434	-189.79	207.15
returnoneq~y	2047	.8447324	1295.12	-47548.1	12555.81
qratio	2047	1.70192	6.926431	.09	297.26
debtassets	2047	.5784416	.3540192	0	7.32
debtequity	2047	2.921314	34.99848	-181.71	1268.77
ltdta	2046	.1602873	.2625423	0	5.054844

Source: Author's calculations using Stata Software (for the data collected over the period 2000 to 2014)

Table 4.1 above shows that the average of Tobin Q ratio is 170 percent, which is too high and abnormal to inquest a statistical meaning. It also shows a standard deviation of 69 percent, which means the variability of data for Tobin q ratio is very high. The mean for ROE is 84.4 percent, with a very high standard deviation which is abnormal to make a statistical decision basing on it. The mean for ROA is 126.7 percent, with the standard deviation which is also very high to make a statistical analysis. The independent variables, debt/equity and debt/assets which show the capital structure have a mean of 292 percent and 57.8 percent respectively. It means that most firms are being financed mainly by debt as compared to equity. However, it also shows that 57.8 percent of the firms' assets are being financed by debt. The mean LTDTA is 16 percent.

4.2 INFERENTIAL STATISTICS

In this study, the researcher only examined the strength of how variables are related using correlation analysis. Moreover, the researcher also examined what effect does the change on independent variables has on dependent variables by way of analysing the regression models discussed earlier on in Chapter Three.

4.2.1 Correlation Analysis

Correlation is a statistical analytical tool which is used to quantify the magnitude at which the independent and dependent variables are correlated. There is a rule of thumb which is used to explain how the results from this model are interpreted. In general, correlation shows how the independent and dependent variables are correlated. It is also very important to note that this model only measures the correlation between variables with only values which range from negative one to positive one. In order to have a clear picture of how this model is interpreted, the researcher generated figure 4.1 to aid in the explanation of how to interpret it.

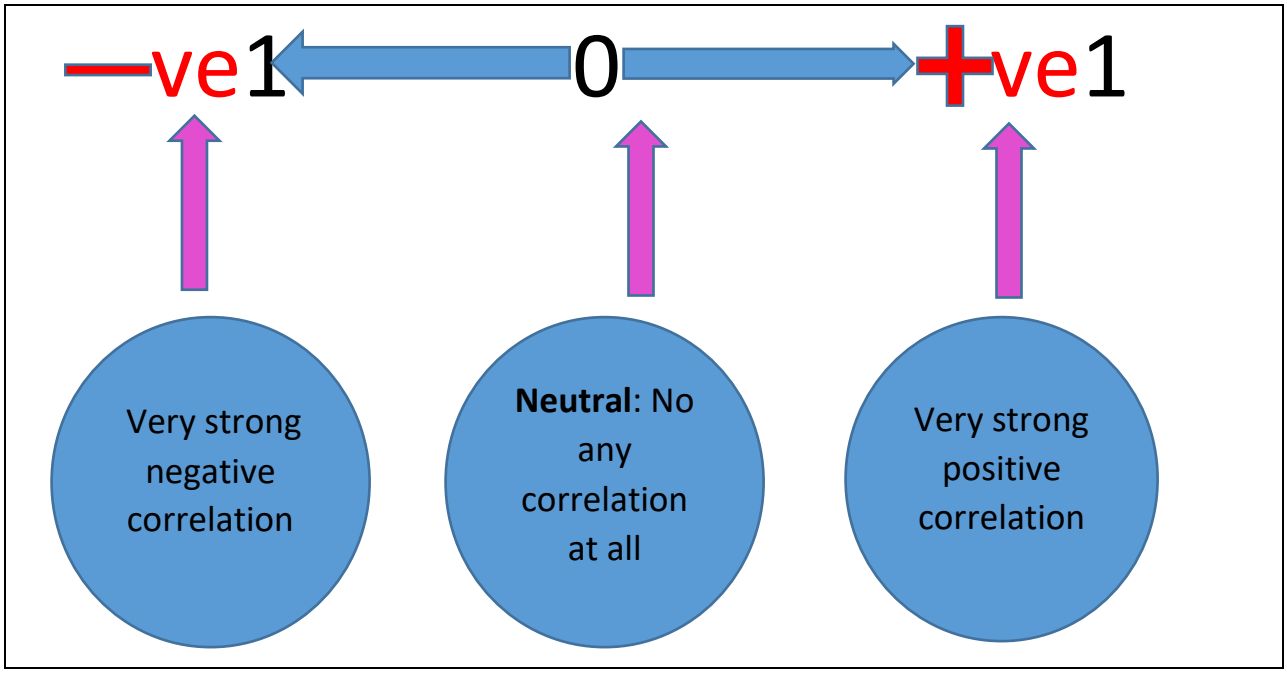

Figure 4.1: Correlation analysis

Source: Author's Drawings

Figure 4.1 shows that figures which are close to one indicate a very strong positive relationship. The values near zero show a very weak relationship and at point zero it means there is no any relationship between variables. If the figures are close to negative one, it shows a very strong negative relationship. Furthermore, it is also important to explain what it means when we say negative correlation or positive correlation. In order to explain this movement between variables, the researcher used figure 4.2 to show this movement.

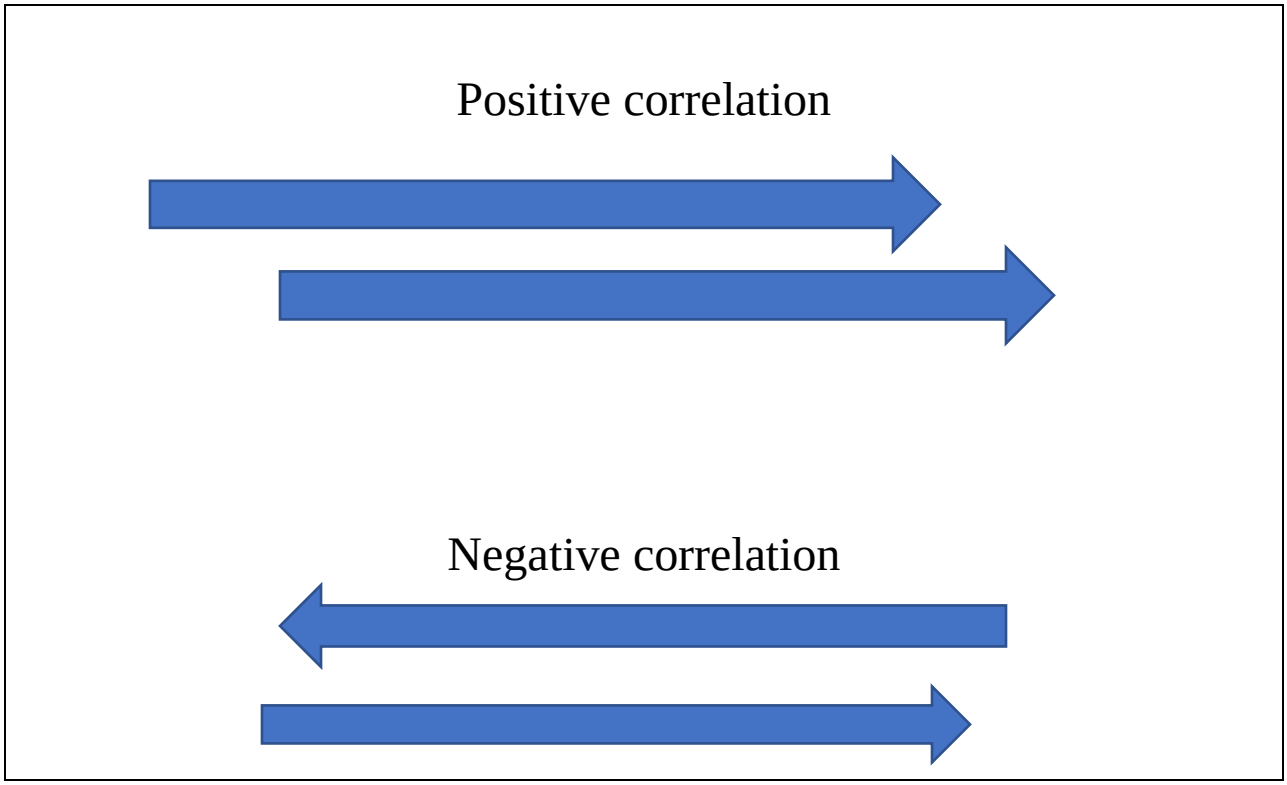

Figure 4.2: Correlation analysis showing movement of variables

Source: Author's Drawings

The above diagram shows that on a positive correlation, the variables moves in tandem with each other, this means that if an independent variable increases by 50 percent, the dependent variable also increases by the same percentage, if the independent variable decreases by 50 percent, the dependent variable will also decrease with the same percentage. This is also known as perfect correlation. On the other hand, if it is a negative correlation, it just simply means that variables are moving in an opposite direction as shown in figure 4.2. This means that if an independent variable

increases by 50 percent, the dependent variable will also decrease by 50 percent and vice versa. Table 4.2 shows the data obtained from this research showing the correlation analysis.

Table 4.2: Correlation analysis

	totala~s	size	debtas~s	debteq~y	ltdta	return~s	return~y	qratio
totalassets	1.0000							
size	0.5826	1.0000						
debtassets	0.0055	-0.1112	1.0000					
debtequity	-0.0056	-0.0044	0.0527	1.0000				
ltdta	0.0919	-0.0397	0.7220	0.0075	1.0000			
returnonas~s	0.0456	0.1490	-0.1539	-0.0292	-0.1358	1.0000		
returnoneq~y	0.0127	0.0739	-0.0207	0.0042	-0.0578	0.1122	1.0000	
qratio	-0.0101	-0.0759	0.0205	0.0010	0.0209	0.0106	-0.0075	1.0000

Source: Author's calculations using Stata Software (for the data collected over the period 2000 to 2014)

The table above shows the relationship between variables. However, the researcher is more interested in analysing the relationship between independent and dependent variables. The table shows that the relationship between total assets, debt/asset and LTDTA is a very weak positive relation, debt/equity versus total assets, it shows a negative weak relationship. There is also a negative relationship between debt/ asset and LTDTA, and dependent variables, except for Tobin

Q ratio which has a positive relation. This means that when debt /asset ratio increases, the ROE and ROA decreases at a very low level. However, the results show that when debt/equity increases, it is only ROA which goes down at a very low rate. However, the other dependent variables show a very weak positive correlation.

4.2.2 Regression Models

In Chapter Three, nine regression models were developed to examine the relationship between capital structure and firms' performance. Table 4.3 indicates the relationship between variables.

Table 4.3: Regression models

Equation	Obs	Parms	RMSE	"R-sq"	F	P
returnonas~s	2046	4	15.85398	0.0255	17.78393	0.0000
returnoneq~y	2046	4	1293.611	0.0043	2.9254	0.0327
qratio	2046	4	6.931477	0.0005	.3395267	0.7968

	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
returnonassets						
debtassets	-5.182988	1.434419	-3.61	0.000	-7.996065	-2.369912
debtequity	-.0104546	.0100385	-1.04	0.298	-.0301413	.0092321
ltdta	-3.241777	1.931938	-1.68	0.094	-7.030552	.5469976
_cons	16.22757	.7309678	22.20	0.000	14.79405	17.66109
returnonequity						
debtassets	160.1547	117.0419	1.37	0.171	-69.37921	389.6885
debtequity	.0939829	.8190913	0.11	0.909	-1.512359	1.700325
ltdta	-441.4306	157.6371	-2.80	0.005	-750.5769	-132.2843
_cons	-21.34288	59.64356	-0.36	0.720	-138.3114	95.62567
qratio						
debtassets	.2202689	.6271384	0.35	0.725	-1.009629	1.450167
debtequity	.0000518	.0043889	0.01	0.991	-.0085553	.008659
ltdta	.3374455	.8446575	0.40	0.690	-1.319035	1.993926
_cons	1.52005	.3195845	4.76	0.000	.8933043	2.146796

Source: Author's calculations using Stata Software (for the data collected over the period 2000 to 2014)

The results from the models above indicate a very low percentage of the R square, which means that the data are not well explained by the models. However, it is also important to note that in statistics, it does not mean that the model is very bad if the R square values are very low, one can still carry out an investigation between variables.

The P value for ROA shows a statistical significant of 0.000 on debt/assets. It also shows that an increase in one unit of debt/assets results in a decrease of -5.18 units of ROA, as shown by the regression coefficients, this shows a negative relationship between these two variables. The P value results between ROA debt/equity shows that it is not statistically significant, however, it shows a negative relationship. The relationship between ROA and LTDTA is significant at 10 percent, which is not a strong relationship, but of statistical significance. It also shows a negative relationship of -3.24

The P value for ROE with the independent variables shows insignificant statistical results, except for LTDTA which shows a strong significance at 5 percent, with a negative relationship of -441.43. However, it is also important to mention that the regression coefficients between ROE and debt/equity and debt/assets shows a positive relationship. The P value between Tobin Q ratio and independent variables shows that the results are of no statistical significance, although the regression coefficients show a positive relationship.

4.3 SUMMARY OF RESULTS

Table 4.4 shows a summary of all the findings from inferential statistics. The results show that the models give mixed results, with ROA and independent variables giving a negative relationship, while both regression and correlation giving contrasting views on whether the relationship is significant or not. The relationship between ROE and independent variables indicate mixed views between two methods on debt/equity, which shows a negative and positive relationship. However, debt/ assets show a positive relationship with different views from both models on whether it is significant or not. Moreover, the relationship between ROE and LTDTA is negative and significant in both models.

The relationship between Tobin Q ratio and independent variables is very interesting since it indicates that all models show a positive relationship. However, both models give different views on whether it is significant or not. Regression models state that the relationship is insignificant, while correlation indicates that it is significant.

Table 4.4: Summary of findings

Variables		**Significance**		**Relationship**	
Dependent	**Independent**	**correlation**	**Regression**	**correlation**	**Regression**
ROA	Debt/Equity	Significant	Insignificant	Negative	Negative
	Debt/Assets	Insignificant	Significant	Negative	Negative
	LTDTA	Insignificant	Significant	Negative	Negative
ROE	Debt/Equity	Significant	Insignificant	Negative	Positive
	Debt/Assets	Significant	Insignificant	Positive	Positive
	LTDTA	Significant	Significant	Negative	Negative
Tobin Q Ratio	Debt/Equity	Significant	Insignificant	Positive	Positive
	Debt/Assets	Significant	Insignificant	Positive	Positive
	LTDTA	Significant	Insignificant	Positive	Positive

Source: Author's Summary Based on the Results of the Study

4.4 SUMMARY

This chapter presented the findings from the research study. The overall objective was to solve the research problems using different statistical models. In the next chapter, the research findings are discussed.

CHAPTER FIVE

DISCUSSION

5.1 INTRODUCTION

This chapter is very vital to the research since it provides a discussion of the research findings from the previous chapter. The researcher discusses the results in three main ways: firstly, by testing the findings with the aims and objectives of the study which are mainly to study the relationship between capital structure and firms 'performance. Secondly, in the light based on theories and empirical studies reviewed. Lastly, the results are discussed based on the available literature pertaining to the study. To conduct this study, three variables were used as a measure of firm's performance these are ROA, ROE and Tobin Q ratio. Three variables were also used as proxies for capital structure these are debt/equity, debt/assets and LTDTA.

5.2 DISCUSSION OF FINDINGS

The main aim of this study was to explore the relationship and impact between capital structure and firms' performance, as well as to assess if the optimal capital structure exists. The study showed that there is a relationship between the variables representing capital structure and those representing firms' performance. From the study, capital structure represented by debt/equity, debt/assets and LTDTA, has a negative relationship with ROA. This means it has a negative impact on firms' performance, that is, when the level of debt increases, the return on assets decreases.

Therefore, it is important to mention that it is not worthwhile to borrow more funds to finance the assets since it would result in less return on those assets. This might be due to high interest rates which are being charged on assets, which is more than the income being generated by those assets. However, these findings are very interesting since they refute the capital structure theory by Modigliani and Miller, that firms' value increases with more debt. Besides, the study has no significant relationship between debt/equity and firm performance but LTDTA and debt/assets show a significant relationship.

The surprising results might be due to different time frame on which the studies were conducted, or it might be due to different locations, with this one putting more emphasis on the firms quoted on the JSE. In the time of Modigliani and Miller, firms were still going under restructuring from the effects of war since it was just post World War 2. Moreover, the cost of debt by then was very low since there was the need to enhance more production by then. Whereas, this research was carried out on firms which were going under a turbulence time including the recession of 2008. It is also important to note that the cost of debt has risen significantly as compared to then, because many borrowers are becoming stricter due to high levels of risk associated with lending funds.

The differences in the results could further be due to high interest rates and the lack of proper debt financial markets thus exacerbating the situation. Therefore, this explains why many firms are failing due to financial distress, as reported by the Ministry of small enterprises and community development on the South African broadcasting corporation (SABC) news bulletins in November 2015.

The findings between ROA and capital structure are in line with the findings by Saedi and Mahmood (2011) who carried out their research on Tehran Stock Exchange. However, the results on debt/equity and debt /assets show an insignificant positive relationship. This is in line with the tradeoff theory , which argues that firms with high debt/equity generate more profits. On the other hand, LTDTA shows a significant negative relationship, which also points to the same explanation above, that an increase in debt negatively impacts on the firms' value. This is in line with the findings by Iavorskyi (2013) who concluded that very profitable firms will use low debt levels. In contrast, Mujahid and Akhtar (2014) in their research found a very significant positive relationship between capital structure and firms' performance. Their results showed that as firms uses more debt they become more profitable. However, this might be since in Pakistan according to them the government is giving companies low interests rates on debt to stimulate economic growth.

Using correlation method, Tobin Q ratio shows a positive significant relationship with all capital structure variables under study. This means that by increasing debt, the firms enjoy market value than on the book values.

The research findings also support the tradeoff theory, which was later on supported by Kale (2014). The theory emphasizes the need to balance off the cost of borrowing and its benefits, whereby the main costs include financial distress while the benefits are tax shield. Tax shield benefits arise, thus, when you pay high interests rates, which means less profits which are tax deductible, therefore the firm will pay less tax. This is considered as an advantage because the same benefit will not be enjoyed if the firm was financed by equity. The cost of equity is dividends to shareholders and they are not tax deductible, hence, the firm will pay more tax.

On the other side, dividends are not mandatory to be paid, which means if the firm made losses or profits, they are not obliged to pay the shareholders as dividends. However, the interest rates, which is cost of debt, is mandatory, whether the firm makes profits or losses, they are required to pay interest rates on borrowed funds, that is debt and it is called cost of financial distress. Therefore, the research findings have shown mixed scenarios which leads to the researcher to support the tradeoff theory, which is a popular finance theory, also well-known as the optimal capital structure theory. Basing on these results, the researcher also supports the previously mentioned researchers who recommended the need to find the optimal capital structure when choosing a funding model since it is the best method when raising capital.

However, these recommendations they are against the pecking order theory by Myers and Majluf (1984), they proposed that optimal capital structure does not exist. They argued that to reduce the problem of asymmetric information between firms' managers and investors, financial pecking order, that is a hierarchy of financing that begins with retained earnings, which is followed by debt and finally, new equity issue must takes place. Their study has many limitations, because they did not clarify on whether they were only referring to established firms which are already making profits or not. Moreover, they were silent about new firms which do not have retained funds. Moreover, they were also silent about paying any dividends to the shareholders which have also an impact on how shareholders will respond if all the profits are to be retained.

Due to lack of transparency on those highlighted issues above, it makes the researcher to pay less attention to this theory and side up with the findings of Jensen and Meckling (1976) in their quest

to highlight the conflict which might arise in using more of debt or more of equity.They suggested that agency problem is between shareholders and debt holders. This form of problem is caused by ideological differences between stockholders and debt holders. The former are more risk takers by nature and they want higher returns, whereas the latter are risk averse and they want guaranteed return even if it is lower. Hence, shareholders may want to take projects with higher risk than debt holders would prefer. In the case of success of these projects, stockholders will earn extra return, while in the case of failure, all losses will be between debt holders and stockholders (Jensen and Meckling, 1976). Consequently, more indebted firms take lower-risk projects. On the same hand, Myers (1977) showed that discrepancies in goals between debt holders and shareholders could lead to under-investment, thus, higher leverage might as well lead to poor corporate performance.

Given this interesting observation, it is therefore possible to conclude that firms should try to strike a balance between their debt and equity levels, so that they benefit from all the findings. It also becomes feasible to refute the pecking order theory which proposes that optimal capital structure does not exist and supports the available literature in finance, which highlights the need for firms to find an optimal capital structure as the best structure when firms are making financing decisions.

The above assertive about optimal capital structure also supported the view of Clarke et al (1988), they interviewed executive managers to ask them if optimal capital structure exists and 90 percent of them they believed it exists.

5.3 SUMMARY

This chapter gave insights regarding the findings of the research. The results of the research were discussed by comparing them to different previous studies. The next chapter discusses the implications of the research, the recommendations, as well as the areas for future studies.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The previous chapter presented a discussion of the results of the study. This chapter gives a discussion of the summary of study, implications, conclusions and recommendations, based on the findings of the research. The chapter also addresses the research questions and how the hypothesis was supported by the research findings.

6.2 IMPLICATIONS OF THE STUDY

The results from the study show that firms or financial managers need to clearly define their financial objectives, that is, if their main aim is to maximise return on assets or return on equity. If the aim is to maximise ROA, then they need to reduce their debt levels since it would negatively affect their objectives. If the aim is to maximise profits, then they need to keep their debt levels higher than equity. In cases where the aim is to pursue both objectives, they need to find the optimal level between debt and equity.

6.3 RECOMMENDATIONS

Drawing from the results of the study, it is important to include all companies listed on the JSE to obtain more objective results. However, there is need to categorise them, firstly, depending on the sector to which they belong, that is, financials, industrial and resources. The researcher has a view that capital structure and firms' performance may vary across sectors, some sectors are more capital intensive than others, hence, different financing models are employed. Therefore, it is also a matter that needs to be empirically investigated to prove and substantiate these views.

Secondly, it is important to subdivide the companies within sectors according to the number of years that they have been listed on the stock exchange, for example, those which were listed between 0 – 5 years, 0 – 10 years, 0 – 15years, in order to assess if the timeframe in which the

company is in existence or listed on JSE, has any effects on its performance. It is therefore suggested that the more the company is listed on the JSE, the more it might improve its efficiency on the capital markets, hence, it also improves its performance. Therefore, it is another gap which was not clearly solved by this research.

Lastly, it is also important to group the companies according to their sizes, which can be measured by either sales volume or by assets value to make a good comparison on whether it is really capital structure with the effect on firms' performance and not size of the company. The recommendations given above are summarised in figure 6.1, which indicates how the companies could be grouped to come up with the best solutions to the research problem.

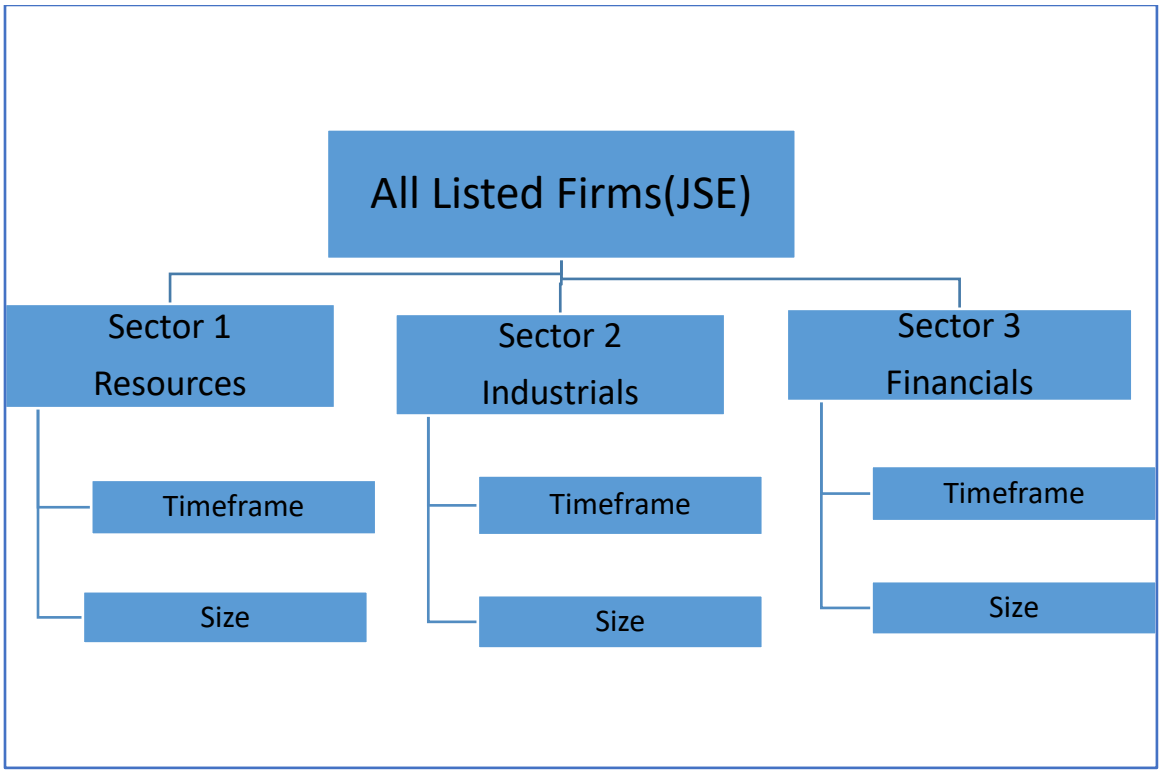

Figure 6.3: Recommendations to solve the research problem

For future research purposes, such research should be carried out in a longer time frame to ensure completeness of the research, to obtain accurate results for the research. Moreover, efforts should

be made to look for all the data necessary for the research to improve the accuracy of the results. Furthermore, future research could also explore in using more control variables in the model such as sales growth and age of a firm. Furthermore, a study of the impact of capital structure on individual sectors could lead to more informed conclusions on how each sector responds to the choice of financing mix since each sector is subject to different regulations and investment requirements.

6.4 Areas for further research

The study focused on JSE listed companies, mainly because clear records are available from the stock exchange. The other areas which include public limited companies, cooperative societies, private companies and other companies which do not fall under regulators or stock listing could be studied. Such a study could lead to a better conclusion on the status of the impact of capital structure on small and medium firms and it might even help the government and financial advisors on what needs to be done to help these firms to grow. The inherent problem has been the lack of information and financial reports in these areas. Moreover, other researchers also need to focus on using qualitative information in future, that is taking primary data through using surveys or interviews with chief financial officers of selected companies to hear more on what methods they use in selecting the methods of finance to use.

6.5 SUMMARY

The conclusions of the research were determined by the data presented in the preceding chapters. The data were analysed based on how the research objectives were being fulfilled hence, the conclusions were as follows. The data collected managed to solve the research problem. It shows that there is a relationship between capital structure and firms' performance. It also shows that the relationship is mixed with some variables, showing a positive relationship and some show a negative relationship, hence, the need to find the optimal capital structure to strike the balance between the contrasting variables.

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APPENDICES

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Ethical Clearance Letter