

**AN ANALYSIS OF THE IMPACT OF CAPITAL STRUCTURE ON THE
FINANCIAL PERFORMANCE OF FIRMS LISTED ON THE NAMIBIAN STOCK
EXCHANGE**

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Abstract

This study attempts to analyze the impact of capital structure on the financial performance of firms listed on the Namibian Stock Exchange. The numerous capital structure theories and inconclusive empirical evidence on the relationship between capital structure and profitability motivated the researcher to carry out this study. A quantitative study using secondary data from financial statements published on the websites of 21 of the 32 firms listed on the Namibian Stock Exchange using data for the period 2010 to 2013 (4 year period) resulting in 84 observations was conducted. These firms were selected on the basis of availability of information necessary for conducting the study and the readiness of Annual Financial Statements of the financial years starting from 2010 to 2013. The variables used in the study are Return on Assets (ROA), Return on Equity (ROE) and Net profit margin (NP) as proxies for the dependent variable which is profitability whereas short-term debt, long-term debt and total debt were used as proxies for the independent variable namely capital structure. Three models were produced for each profitability variable (Y). The study employed panel data regression with pooled, fixed effect and random effect regression. Among the three methodologies, this study found that random effect regression is more appropriate to understand the proposed relationships in model 1 (return on equity) and model 2 (return on assets) in relation to firms listed on the Namibian Stock Exchange over the sample period. However, the fixed effect model was found to be more appropriate in model 3 in which Net profit margin (PM) is the dependent variable. A combination of descriptive and multivariate analysis were conducted. The results of the study can be of great interest to investors, academia as well as firms especially during periods of financial crises. It raises again the question as to whether there is any relationship between capital structure and profitability. The results indicate that the firm's performance is significantly and negatively influenced by its capital structure.

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Dedication

Firstly, I would like to dedicate this study to my late father, Leonhard Uarakuani Tjivasera, for his immense contribution in the form of guidance during the early stages of my life when such advice mattered the most. I came to know his true character when he became an amputee and was thus not in a position to give us material support but he never neglected his responsibility as a father to provide guidance and moral support. I would equally like to dedicate this study to my now retired mother, Erica Mbahijona, for being there for us and supporting the family with her little income that she was earning as a domestic servant during the dark days of abject poverty. Moreover my heart goes out for both my parents who stuck together even though they were not married until the death of our father on the 7th of June 2006 separated them.

Declaration

I, Cleophas Mbahijona, hereby declare that this study is a true reflection of my own research, and that this work, or part thereof has not been submitted for a degree in any other institution of higher education.

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Cleophas Mbahijona

Date.....

CHAPTER 1: INTRODUCTION

1.1 Orientation (capital structure and profitability concepts)

Anderson and Ross (2005) noted that for nearly a century, the assumption that the firm maximizes profits has been prominent in neoclassical economic theory. Hussain (2012) stated that many people believe that the primary responsibility of business corporations is to maximize profits. According to Hussain (2012) the most important argument for this view is a broadly useful one that says that corporations have this responsibility because profit maximization will lead to an 'economically efficient' or 'welfare maximizing' outcome.

According to Vigario (2002), the finance decision is the analysis of how a company should be financed and how the method of finance affects the calculations on investment and value. He further stated that there are two types of finance, equity finance which is provided by the owners of the company and debt finance which is provided by lenders that do not and cannot make decisions on how the company should be run. In an effort to address the question of whether the choice of the capital structure has an impact on the financial performance of the firm, Modigliani and Miller (1958) developed the irrelevance theory in 1958.

This research has been stimulated by previous work including the work of Modigliani & Miller (1958) in this field. It is therefore, hoped that this study will supplement previous work and most importantly makes a significant contribution to the theory/debates in financial literature.

1.2 Statement of the problem

As stated in the orientation of this proposed study, it is generally believed that the main objective of any business entity is profit maximization. There is a problem for financial managers to decide how best to finance their respective firms in order to maximize profits. This

problem could result in businesses becoming bankrupt or losing out on opportunities because they have either taken on too much debt or too little debt.

The agency cost theory developed by (Jensen and Meckling, 1976), helps to explain amongst other things why an entrepreneur or manager in a firm which has a mixed financial structure (containing both debt and outside equity claims) will choose a set of activities for the firm such that the value of the firm is less than it would be if he was the sole owner. Other theoretical models such as the irrelevance theory postulate that there is no relationship between capital structure and financial performance. Some empirical studies such as Akhtar and Mujahid (2014), found that there is a positive relationship between capital structure and financial performance while other studies found a negative relationship. Hosseini et al (2012) and Kajola and Onaolapo (2010) are examples of studies that found that there is a negative association between capital structure and financial performance. Iorpev and Kwanum (2012) concluded that statistically, capital structure is not a major determinant of firm performance.

To the knowledge of the researcher, no study was ever conducted in Namibia to analyze the relationship between capital structure and profitability. Perhaps a study which will analyze the impact of capital structure on the profitability of listed firms in Namibia by using a descriptive quantitative method, will contribute to theoretical models and empirical studies on this topic.

1.3 Objectives of the study

The objectives of the study are as follows:

- To reveal the impact of capital structure on the financial performance.
- To evaluate the inter-relationship between capital structure and financial performance.

In view of the above objectives, the following hypotheses are formulated to be tested:

- H_0 : The capital structure has a significant impact on financial performance.

- H₁: There is a negative relationship between short term debt and financial performance.
- H₂: There is a negative relationship between long term debt and financial performance.

1.4 Significance of the study

Firstly, the study is important in the sense that it contributes to the existing literature on this topic especially with focus on Namibia. Secondly, empirical studies conducted in different economies, produced conflicting results. Since this is arguably the first study of its kind in Namibia, it will hopefully provide an opportunity to examine the relationship between capital structure and financial performance in the Namibian context.

1.5 Limitations of the study

The study is only limited to companies listed on the NSX. Many similar studies conducted did not combine non-financial and financial firms. This study analyses a combination of financial and non-financial firms listed on the NSX.

1.6 Research ethics

Permission was obtained from the NSX to use their dataset purely for academic purposes and, therefore, both the findings and weaknesses this study may pick up from the datasets may not be shared. However, the NSX can use it if they so wish for the purpose of business planning and data methodology improvement respectively. In addition, this research paper shall be made available to other researchers on request for future studies on this topic or other related topics. Since the relationship between capital structure and company performance is widely researched, theories and empirical studies by other researchers are appropriately referenced to avoid plagiarism.

1.7 Research structure

The study will be structured logically following a particular order as follows: Introduction, literature review, methodology, results and discussions, recommendations and conclusion.

CHAPTER 2 : LITERATURE REVIEW

This chapter entails a critical review of both the theoretical framework and the empirical studies on the relationship between capital structure and financial performance.

2.1 Theoretical literature

The Modigliani and Miller irrelevance theory, Trade off theory, Agency cost theory and Pecking order theory were developed by scholars between 1958 and 1984. These theories signified the evolution of the study of capital structure in general.

One of the most important financial decisions facing companies is the choice between debt and equity capital (Glen and Pinto, 1994). This decision can effectively and efficiently be taken when managers are aware of how capital structure influences firm profitability. This awareness would enable managers to know how profitable firms make their financing decisions in particular contexts to remain competitive. In the corporate finance literature, it is believed that; this decision differs from one economy to another depending on country level characteristics.

According to Bos and Fetherston (1993), capital structure affects both profitability and riskiness of firms. Earlier researchers such as Modigliani and Miller (1963) and Titman and Wessels, (1988) also held the same believe. As a result, numerous studies have been conducted by academic writers to examine the impact of capital structure on firm profitability.

In an effort to address the question of whether the choice of the capital structure has an impact on the financial performance of the firm, Modigliani and Miller (M&M) developed the irrelevance theory in 1958. The M & M irrelevance theory assumed no taxes, no transaction cost, no bankruptcy costs, equivalence in borrowing costs for companies & investors, symmetry of market information and no effect of debt on a company's earnings before interest and taxes. In terms of the M&M irrelevance theory, it does not matter what capital structure a

company uses to finance its operations. Modigliani and Miller (1958) demonstrated that, in an ideal world without taxes, the value of a firm does not depend on the debt-equity mix. According to Gifford's study (as cited in Ahmeti and Prenaj, 2015), all these assumptions show that the world imagined by M&M is a controlled environment which cannot be witnessed anywhere in the world or as stressed by many authors, it seems that the real world is a bit different from the world that M&M propositions were established.

In 1963, after realizing that the irrelevance theory was over simplified, Modigliani & Miller developed the trade-off theory of leverage. They theorized that there is potential benefit from debt in a capital structure, which comes from the tax benefit of the interest payments. The difference of this theory to the irrelevance theory is the recognition of the presence of tax and associated benefits. As a result, Modigliani and Miller (1963) reviewed their earlier proposition to include taxes and other market imperfections and contend that capital structure matters and firms can really maximize value by using more debt in their operations so as to take advantage of the tax shield benefits of leverage. The principal theoretical models of capital structure hinges on the idea that firms have information that investors do not have, and that the interests of managers, equity-holders and debt-holders may not coincide. The theories have also recognized the benefits of financial leverage in firm financing while avoiding the cost of financial distress, these recognitions have led to two dominant theoretical models within which other theories are embedded. These are the Static Trade-Off model and the Pecking Order model.

Ligui and Sorin (2009), argued that, the Modigliani-Miller theorem opened a literature on the fundamental nature of debt versus equity. According to Ligui and Sorin (2009), in the perfect capital markets world of Modigliani and Miller, the costs of the different forms of financing

do not vary independently and therefore there is no extra gain from opportunistically choosing among them.

The relationship between capital structure and company profitability is always explained in the corporate finance literature within the framework of 'Pecking Order Theory'. Within this framework, firms would always prefer internal sources of finance as opposed to external sources (Myers, 1984; Myers and Majluf, 1984). These authors argue that, internal funding which is specifically the use of retained earnings is cheaper as a source of finance relative to external funding which is exclusively the use of debt and equity. This preference is due to the cost that is associated with the information asymmetry that exist between managers and outside market participants thus making external funding expensive. Generally, investors are of the view that managers would only issue overvalued shares and the vice versa thereby raising cheap capital. Although this proposition may not always be true, investors often demand higher returns to compensate when there is a new issue thus making external funding relatively expensive (Barclay and Smith, 2005). As a result, astute managers would ignore external funding and use internal sources instead. In the Pecking order model, Myers and Majluf (1984) provided a theoretical foundation for the proposition of Donaldson (1961) that there is a financing hierarchy, where firms prefer internal finance, and if external finance is required firms issue the safest security first.

Gwatidzo and Ramjee (2012) argued that pecking order theory is based on the hypothesis that there exist information asymmetries between managers and investors. Firms prefer retained earnings to debt and would only issue equity as a last resort (Myers and Majluf, 1984). In the Model, raising external finance is costly because insiders have more information about the firm's prospects than outside investors, and outside investors know this and would thus demand higher returns on their investments. Basically, this is what makes external source of financing

more expensive from firm perspective. Generally, firms will issue equity when they think it is overpriced but would not if it is underpriced. From the perspective of outside investors therefore, equity is riskier than debt. Thus, they will rationally demand a higher risk premium for equity than for debt.

From the point of view of the insiders, debt is therefore a better source of funding than equity, and internal funding is even better. Debt financing will only be used when there is an inadequate amount of internal funding available, and equity will only be used as a last resort. As a consequence, Myers and Majluf (1984) observed that, there is no optimal leverage and that observed leverage is simply the sum of past financing events. According to the Pecking order theory, internal financing is used first, then debt is issued; and when is no longer sensible to issue anymore debt, equity is issued.

The implications of the pecking order theory is that companies with few investment opportunities and substantial free cash flow will have low (or even negative) debt ratios because the cash will be used to pay down the debt. It also suggests that high-growth firms with lower operating cash flows will have high debt ratios because of their reluctance to raise new equity (Barclay and Smith, 2005). Many financial managers including this researcher adopt a conservative approach when it comes to financing. In terms of this approach, an existing business is first funded by retained earnings, then debt and lastly the issue of share. This approach is consistent with the Pecking Order theory as described above which was developed by (Myers and Majluf, 1984).

In the Trade-off model, capital structure moves towards an optimum leverage which is determined by balancing the corporate tax savings advantage of debt and the cost of financial distress. This idea has been developed in many papers, including DeAngelo and Masulis (1980) and Bradley at al. (1984). However, it has been questioned by many others, including Miller

(1977), who argues that the Static Trade-off model implies that firms should be highly levered than they really are, as the tax savings of debt seem large while the cost of financial distress seem minor. Other theories that are rooted in the Static Trade-off model are bankruptcy, agency problems, and the benefits of tax savings. The trade-off theory refers to the idea that the company chooses between how much debt finance and how much equity finance to use by balancing the costs and benefits. Gwetidzo (2012) stated that according to the trade-off theory, there are cost and benefits associated with using debt. Iddirisu (2011) concluded that publicly traded Ghanaian firms did not use the trade-off theory in setting their capital structures over the period 2001- 2007.

In 1976, Michal Jensen and William. Meckling co-authored a paper in which they amongst other things addressed the agency cost of capital structure. According to Jensen and Meckling (1976), the agency costs associated with the existence of debt are at a maximum where all outside funds are obtained from debt.

From the two broad models indicated above, numerous theories have emerged in the corporate finance literature, all in an attempt to define the theory of corporate financial policy. However, for the purpose of this study, these theories would be grouped into three broad categories and discussed in turn. More so, it is realized that these theories are not mutually exclusive but each can help us understand the various aspects of financing decisions. These three categories are: taxes, contracting costs and information asymmetry costs. Specifically, taxes and contracting costs would be reviewed within the context of the “static trade-off theory”, while information asymmetry costs would be discussed within the views of the “pecking order theory”.

[2.1.1 Capital structure and the issue of tax benefits](#)

According to the Business Dictionary, a tax is a compulsory monetary contribution to the state's revenue, assessed and imposed by a government on the activities, enjoyment, expenditure,

income, occupation, privilege, property etc., of individuals and organizations.

Basically, when making corporate business decisions, managers try to minimize taxes within the confines of the tax laws of that country. While tax evasion is a crime, tax avoidance is good management (Brownlee et al, 2001).

Normally, the basic corporate profits tax allows companies to subtract interest payments but not dividends in their computation of taxable income. Thus introducing debt into a firm's capital structure can lower its expected tax burden and thereby increase its after-tax cash flow (Modigliani and Miller, 1963). If there were only a corporate profits tax and no individual taxes on the returns from corporate securities, the value of a debt-financed company would equal that of an identical all-equity firm plus the present value of its interest tax shields (Miller, 1977). The present value represents the contribution of debt financing to the market value of the firm. This could be estimated basically by multiplying the tax rate by the principal amount of outstanding debt (provided the firm expects to maintain its current debt level). The above illustration echoing the benefits of debt usage over equity can certainly not be true. This is because holders of debt and equity must pay taxes on the interest income and the dividend/capital gain that they receive respectively. However, debt-holders do know that they pay higher taxes than equity holders. Thus debt-holders being rational will therefore demand higher returns on their investments relative to equity holders to compensate. In this vein, it's the equity holders that bear all the tax costs of the firms operations, whether the company pays the taxes directly in form of corporate income tax or it pays it indirectly in the form of required returns on the debt it sells (Barclay and Smith, 2005). The tax benefit emanating from more debt usage may be eroded by a high tax on interest income.

However, it is important to note that it is the trade-off between debt and equity that determines the net effect of taxes on debt usage (Miller, 1977; Myers, 2001). Thus tax policy has a

significant effect on the capital structure decisions of firms (Green et al, 2002). The implication of the tax theory on capital structure therefore suggests that, firms must use more debt to create value (Modigliani and Miller, 1963). However, this proposition must not deceive managers into introducing very high levels of debt into their operations because of the associated benefits. This is because the tax advantage has an eminent possibility of being dashed away by the higher tax that debt-holders pay on their interest income compared to what equity-holders pay on their dividends and capital gains. We must realize that investors in general, and debt-holders in particular being interested in their after tax profits would incorporate this loss value in their expected returns to pay off thus making the ultimate cost of debt higher than equity. Thus, firms that can derive maximum benefit from debt usage are those whose managers can accurately determine the point where the advantages of interest tax shield ends and where the costs of financial distress starts.

2.1.2 Contracting costs

No matter the tax benefits of higher leverage, they must be set against the greater probability and higher expected costs of financial distress. Thus, another capital structure theory that can be reviewed within the context of the “trade-off theory” as promulgated by Myers and Majluf (1984) is contracting costs. Contracting costs are the costs that firms bear as a result of using high levels of debt in their operations and also the consequences that they may face due to the running of the firm by managers rather than the true owners of the firm. The two most prominent costs that can be identified under this are *bankruptcy and agency costs*.

2.1.3 Bankruptcy cost

Basically, bankruptcy costs refer to costs that occur when a firm fails to honour its debt obligations and stand the possibility of being closed down (Titman, 1984). These costs are both direct and indirect. The direct costs are often legal and administrative expenses and are often small in relation to corporate market value. However, the indirect costs are substantial and are

costs that result from unwillingness of stakeholders to do business with the firm (Warner, 1977). For example, if a firm is perceived to be near bankruptcy, customers may not be willing to do business with such firms because the possibility that they may not be able to meet their warranty obligations is high (Abor, 2008). Further, suppliers and the banks may not extend credit for such firms. Such restrictions or limitations can affect a firm's value and its performance, as they eventually may have to forgo attractive investment opportunities leading to underinvestment (Kim et al, 2006). This could adversely affect firms' profitability and existence. Their argument is that firms may be unable to pay their debts if they over-borrow and become financially distressed. Nonetheless, it is reasonable for firms to be highly leveraged so as to increase value because of the tax deductibility of debt (Modigliani and Miller, 1963). Warner (1977) contends that bankruptcy costs increase with increased debt used thus reducing the value of the firm. Thus the optimal capital structure is that combination in which the next cedi of debt is capable of providing an additional tax subsidy that just offsets the resulting increase in the expected costs of financial distress.

When firms become bankrupt, managers may lose their jobs. This means that bankruptcy is costly to a firm's management and they will therefore do everything possible to prevent it. In view of this understanding, managers of financially distressed firms would advocate for less debt in their capital structure relative to their low-debt counterparts so as to safeguard against underinvestment and its associated problems. However, some academic writers are of a different view in using less debt in the operations of a firm in preserving managements' job and also to resolve the problem of underinvestment. Grossman and Hart (1982) argued that if bankruptcy is costly to managers, perhaps because they would lose benefits of control or reputation, then debt finance should rather create incentives for managers to work harder, consume fewer perquisites, make better investment decisions, etc. because this behavior reduces the probability of bankruptcy. Thus the application of debt to mitigate bankruptcy cost

and to control managerial inefficiency as espoused by Leibenstein (1966);

Grossman and Hart (1982); Jensen (1986); and Champion (1999) is at variance with what some authors like Warner (1977) and Barclay and Smith (2005) have noted, as they observed that financial distress and therefore bankruptcy costs can be reduced significantly if less debt is used relative to equity in the capital structure of a firm.

2.1.4 Agency cost theory

In corporate finance literature, agency theory was formalized by Jensen and Meckling (1976) building on an earlier work by Miller and Fama (1972). Under this, agency cost is defined as the costs that arise due to variances in the interests of principal and agents of the firm, both of whom endeavor to maximize their own objectives at the expense of the other. Thus, the principal would typically impose some set of restrictions on agents' behavior to align their actions with the principal's objectives (Kim et al, 2006).

Berle and Means (1932) contend that in the modern firm in which share ownership is widely held, managerial actions depart from those required to maximize shareholder returns. In agency theory, the owners (debtors and shareholders) are principals and the managers are agents and there is an agency loss which is the extent to which returns to the claimants, the owners, fall below what they would be if the principals, exercised direct control of the corporation (Jensen and Meckling 1976).

Jensen and Meckling (1976), identified two types of conflicts that exist between principals and agents. These are, on the one hand, conflicts between shareholders and managers, and on the other hand, conflicts between debt-holders and equity holders.

Harris and Raviv (1990) observed that the conflicts between shareholders and managers arise because managers hold less than 100% of the residual claim. Consequently they do not capture the entire gain from their profit enhancement activities, but they do bear the entire risk of these

activities (especially the risk of losing their jobs). Consequently, managers would embark on projects that would preserve their interest and jobs relative to maximizing the shareholders wealth.

For example, Jensen (1986) argues that in large mature public companies, “free cash flow” is available that cannot be profitably reinvested in the firm. The natural inclination of corporate managers is to use these excess cash to sustain growth at the expense of profitability, either by overinvesting in their core businesses or, perhaps worse, diversifying through acquisition into unfamiliar ones. To curb this unwarranted behavior on the part of managers, shareholders can demand that more debt be introduced into the firm’s operations so as to increase managerial performance (Leibenstein, 1966; Myers, 1977; Champion, 1999). The debt agreement must contractually obligate payments of interest and principal so as to perform the role of dividend payments (which are not mandatory) in squeezing out excess capital. Thus, in industries generating substantial cash but facing few growth opportunities, debt financing can add value simply by forcing managers to be more critical in evaluating capital spending plans.

The inefficiency that results due to the conflict between managers and shareholders can also be effectively resolved by making corporate managers own substantial amount of their company’s equity. This action would make managers more loyal and execute more responsible and prudent investment decisions, which are necessary for increasing shareholders wealth.

Agency costs can also arise due to conflicts between debt-holders and equity holders (Jensen and Meckling, 1976). These conflicts are deeply embedded within the concept of moral hazard and risk-taking between the parties and the associated costs they add to firm financing. The conflicts can be explained in three distinct ways and are discussed in turn.

Firstly, it is generally known that firms are not obligated to pay dividends to equity holders. Rather, they are entitled to residual claims of the firm after debt-holders have been paid.

However, debt-holders receive fixed income on their investments whether the firm performs creditably or not else it is forced into bankruptcy. Consequently, debt-holders care about the level of risk that firms take which should be minimal so as to protect their investments. Nonetheless, equity holders would prefer management to take relatively excessive risk in order to maximize their value (the value of shareholders). This thinking is based on the concept of risk-return trade-off. Debt-holders being aware that shareholders through management would increase the risk of their investments would thus factor this 'risk increase' into their expected returns to compensate thus increasing the cost of debt. Thus astute managers in situations like this would resort to more equity use relative to debt in financing their operations although they would forgo the benefits of debt use.

Secondly, Myers (1977) argues that the agency costs that arise between debt-holders and shareholders can be enormous as it could create serious 'underinvestment problems'. For example, consider a high-growth company that is having problem in honoring its debt obligations. Since the value of such a firm will depend heavily on its ability to carry out its long-term investment plan, what this company needs is an introduction of more equity capital. This capital is needed to protect the firm against the costs of financial distress. However, the acquisition of this type of capital becomes rather expensive since the providers (shareholders) think it is going to improve the debt-holders position. Consequently, managers may rationally go without both the capital and the investment opportunity which is detrimental to the survival of the firm.

From the foregoing analysis, Myers contends that companies whose value consists primarily of intangible investment opportunities or "growth options," as he called them should avoid debt to limit their greater potential loss in value from underinvestment. However, mature companies with few profitable investment opportunities (firms with most of their value reflecting cash

flows from tangible assets) would have lower expected financial distress costs. Hence, mature firms should have significantly higher leverage ratios relative to high-growth firms. The implication of the argument from Myers (1977) therefore is that shareholders' funds should be used to finance profitable investment opportunities whilst debt should be used to finance less profitable investment opportunities.

Nonetheless, what is contradictory in Myers (1977) argument to modern corporate financing is the use of rather more debt in the operations of high-growth firms. Generally, high-growth firms have relatively more profitable investment opportunities than their mature counterparts. The evidence therefore is that managers of high-growth firms believe their investment projects are so viable so much so that it can pay-off the higher debt levels and consequently enjoy the concomitant benefits of debt financing.

Last but not least, the conflicts between debt-holders and equity holders may occur because debt contracts give equity holders a motivation to invest sub-optimally (Jensen and Meckling, 1976). Basically, debt contracts provide that if an investment yields large returns, well above the face value of the debt, most of the profits should go to shareholders who are residual claimants of the firm's cash-flows while debt-holders receive fixed agreed payments.

The bone of contention however is that debt-holders bear all the consequences if the investment fails, since shareholders are under the veil of limited liability. As debt-holders are not unaware of this development, debt financing becomes expensive as they would factor it into their required returns to compensate.

Another flip of the coin is that the limited liability status of shareholders and the fact that they relatively enjoy most of the benefits when the firm does well, give them (shareholders) an

incentive to invest in very risky projects, even if they are value-decreasing. Such investments result in a decrease in the value of debt. The loss in value of equity from the poor investment (excessively risky investment to maximize value by shareholders) can more than offset the gain in equity value captured under reasonable and less risky investment practices. Thus, the cost of the incentive to invest in excessively risky and value-decreasing projects created by debt is borne by the equity holders who issue debt. This effect, generally called ‘asset substitution effect’, is the agency cost of debt financing.

From the above discussion, one can conclude that firms with higher agency costs due to conflict between the firm and the debt-holders should have lower levels of debt in their capital structure to maximize value.

Thus to effectively reduce agency problems, there is a need to change the capital structure of the firm. This can be done for example by sending a binding signal to debt-holders by incorporating call provisions into the debt contracts among others (Arshadi, 1989). This provision would inevitably allow debts to be withdrawn before their maturity, an act which is capable of changing the capital structure of the firm by reducing the debt levels and reducing the agency costs (Barnea et al, 1980).

2.1.5 Information asymmetry costs

Barclay and Smith (2005) argued that business executives often have better information about the value of their firms than outside investors. In corporate finance, information asymmetry refers to the idea that firm insiders, typically managers have superior knowledge than do other market participants on the value of their firm’s assets and investment opportunities (Klein et al., 2002). This information asymmetry creates an avenue for market participants to price firms’ claims incorrectly, thus providing a positive role for corporate financing decisions by managers.

According to Abor (2008), the existence of information asymmetries between the firm and likely finance providers causes the relative costs of finance to vary among the various sources of finance. The presence of this information “gap” between managers and investors has led to the formulation of two distinct but related theories of financing decisions, namely: market timing theory and signalling theory. These are reviewed within the “pecking order” model and are discussed in turn.

2.1.6 Market timing theory

Myers (1984) and Myers and Majluf (1984), contend that firms will always resort to the cheapest source of funding to stimulate their operations. This is based on the assumption that managers would act in the best interest of shareholders. The market timing theory is a theory that argues that managers critically observe the funds market and taking advantage of the information gap, would only issue new shares when they believe those shares are overvalued by investors and vice versa. The fact is that pertinent problems within the firm may not be known immediately to outside investors (unless there is a presence of insider-trading) and thus would not reflect in the share prices of the companies. This is true because in the real world, capital markets are not efficient.

This means that companies that have profitable uses for more capital but believe their shares are undervalued will generally choose to issue debt rather than equity to avoid diluting the value of existing shareholders claim (Barclay and Smith, 2005). Investors are aware that managers know more than they do about the future performance of the firm, and they also understand management’s motivations to issue overpriced shares and to avoid issuing undervalued ones. This well-known propensity of companies to “time” their share offerings is evident with decreases in share prices after announcement of new shares. As a result, these issues become relatively expensive and managers would reasonably avoid them and rather use internally generated funds. Thus, by choosing the timing of new shares, managers can control

to some extent the informational disadvantage of the market.

Further, dynamic models of asymmetric information by Lucas and McDonald (1990) and Korajczyk et al. (1992) have also suggested that firms should issue shares to invest in growth opportunities to avoid the costs of financial distress. However, the issuance of new equities become rather expensive as investors are not unaware that firms would only issue equity when it is overpriced and would thus demand higher returns to compensate. As a result, astute managers would prefer to use internally generated funds rather than issuing new shares. The same notion would also inform debt-holders to demand higher returns on their investments to pay-off. Again, internally generated funds become a cheaper source of funding compared to debt. However, it is important for the researchers to recognize that firms may not necessarily issue new equities because they believe it is overvalued or use internal funds because their existing shares are undervalued. This explains why information asymmetry can be costly to firms as investors may misinterpret managers' behavior and charge them unfairly.

It is therefore clear from the above that firms maximize value by steadily choosing to finance new investments with the "cheapest available" source of funds. Managers would prefer internally generated funds (retained earnings) to external funding and, if outside funds are needed, they prefer debt to equity because of the lower information costs associated with debt issues. Generally, share prices are more sensitive than debt to any proprietary information about the firm's future performance. This is because debt-holders receive fixed payments over the firm's cash flows whilst shareholders are residual claimants, well after debt-holders are paid.

Myers (1984) contends that companies will only issue equity as a last resort when their debt capacity has been exhausted.

It is therefore gleaned from the above that there is a certain hierarchy of firm preferences regarding financing of their investments. Undoubtedly, firms would prefer internal sources of

funding to expensive external finance (Myers and Majluf, 1984). This “pecking order” theory would thus predict that companies with few investment opportunities and substantial free cash flow will have low (or even negative) debt ratios because the cash will be used to pay down the debt. It also suggests that high-growth firms with lower operating cash flows will have high debt ratios because of their unwillingness to raise new equity.

2.1.7 Signaling theory

Signaling theory is one of the most important theories in corporate finance literature that is based on the idea that managers have superior information than outside investors on the performance of the firm, and would thus communicate this potential to investors by increasing leverage. However, in contrast to market timing, where securities offerings are seen as an attempt to raise “cheap” capital, the signaling model assumes that financing decisions are designed basically to convey managers’ confidence in the firm’s future prospects to outside investors (Barclay and Smith, 2005). Most often, this is done to raise the value of shares when managers think they are undervalued.

Debt mandates firms to make a fixed set of cash payments to debt-holders over the term of the debt security. Firms could be forced into bankruptcy if they default in honoring their debt obligations. Also, bankruptcy is costly to managers as they could lose their jobs. Managers are unaware of this and would therefore do everything possible to avoid it in order to maintain their positions, all things being equal.

Nonetheless, dividend payments are not obligatory and managers have more flexibility over their payments and can reduce or omit them in times of financial difficulty (Barclay and Smith, 2005). For these reasons, adding more debt to the company’s capital structure can serve as a credible signal of higher expected future cash flows (Ross, 1977). In this vein, increasing leverage has been suggested as one potentially effective signaling device. Different academic

writers have suggested different signaling models in which they demonstrated what determines more debt use by firms. We must appreciate that they all reviewed the models within the framework of information asymmetry. These models are reviewed in turn.

According to Akerlof (1970), managers with informational advantage have the motivation to signal their private information through their choice of leverage levels. He argues that, firms with higher expected cash flows would have the incentive to take on higher debt levels relative to firms with lower debt levels because of the probability of bankruptcy and its associated costs.

Further, Leland and Pyle (1977), also provided another fundamental signaling model to demonstrate what motivates managers to use more debt in their operations. In their model, the authors contend that a high value firm signals their kind by retaining a high proportion of ownership and would thus use higher levels of debt relative to their low-quality counterparts.

Thus as in Ross (1977), the authors go ahead to predict a positive correlation between firm quality and financial leverage in their model.

Furthermore, Heinkel (1982) has also developed a debt signaling model in which the information asymmetry is about the mean and variance of the returns. In his model, the assumed positive correlation between the means and variance drives a signaling equilibrium in which higher-value firms signal their quality with higher debt levels. He goes on to argue that higher-value firms are relatively more risky than their low-value counterparts. This finding is in consonance with Ross (1977) that higher-value firms have a greater probability of default.

Another signaling model that is worth discussing is that of Blazenko (1987). In this model, Blazenko observed that risk-averse managers would generally pass up risky but profitable investment opportunities thus decreasing the value of the firm. Consequently, these managers may avoid debt as they believe this would increase their probability of bankruptcy. However,

managers of high-value firms would show their sort by higher debt use. Nonetheless, this is not to say that managers of higher-value firms are always risk-lovers. The implication of this model just like those reviewed above suggests a positive relationship between leverage and firm quality.

To add to the above, some authors also identified another important variable that can also effectively signal firm quality in addition to debt. According to Ravid and Sarig (1991), payment of dividends to shareholders can significantly convey firm quality to investors. Thus, their model also suggests a positive correlation between high-value firms on one side and dividend payments on the other side.

To conclude, the lesson learnt from the signaling theory of asymmetry information is that higher-value firms would use more debt in their capital structure to signal this value relative to their low-value counterparts. This is premised on the fact that inefficient firms cannot manage debt and any attempt to use more debt would jeopardize the financial health of the firm due to bankruptcy and its associated costs.

2.2 Empirical literature

2.2.1 Empirical evidences relating capital structure and firm profitability

According to Kyeboah-Coleman (2007) most of the microfinance institutions employ high leverage and finance their operations with long-term as against short-term debt. Also, highly leveraged microfinance institutions perform better by reaching out to more clientele, enjoy scale economies, and therefore are better able to deal with moral hazard and adverse selection, enhancing their ability to deal with risk.

According to Fama and French (1998), debt usage does not necessarily grant tax benefits; high leverage may rather generate agency problems among shareholders and debt- holders that predict negative relationships between leverage and profitability.

Iorpev and Kwanum (2012) concluded that statistically, capital structure is not a major determinant of firm performance. They recommended that managers of manufacturing companies should exercise caution while choosing the amount of debt to use in their capital structure as it affects their performance negatively.

Duyen (2012) argued that an increase in short-term debt position is associated with a decrease in profitability; thus, the higher the short-term debt, the lower the profitability of the firm. It is found that a significant positive relationship exists between the short term debt and profitability and statistically there is a significant negative relationship between long term debt and profitability. The results are partially consistent with the previous studies as the negative relationship between long term debt and the firm performance tends to support the dominant pecking order theory. The association of short term debt and the financial performance in contrast attests the static trade-off theory. Total debt as a whole has no association with the firm's performance because of the inherited different characteristics of short term debt and long term debt.

In a study, Abdullah et al. (2012), investigated the impact of capital structure on firm performance by analyzing the relationship between operating performance of Malaysian firms, measured by return on asset (ROA) and return on equity (ROE) with short-term debt (STD), long-term debt (LTD) and total debt (TD). Four variables found by most literature to have an influence on firm operating performance, namely, size, asset grow, sales grow and efficiency, are used as control variables. This study covers two major sectors in Malaysian equity market which are the consumers and industrial sectors. About 58 firms were identified as the sample firms and financial data from the year 2005 through 2010 are used as observations for this study, resulting in a total numbers of observations of 358. A series of regression analysis were executed for each model. Lag values for the proxies were also used to replace the non-lag

values in order to ensure that any extended effect of capital structure on firm performance is also examined. The study found that only STD and TD have a significant relationship with ROA while ROE has a significant relationship on each debt level. However, the analysis with lagged values showed that none of the lagged values for STD, TD and LTD has significant relationship with performance.

Biglar and Salehi (2009), studied the issue of whether the capital-structure decision impacts firms' performance. For this reason, they used 3 definitions of capital structure in scope of book value to market value and 5 measures were assumed for financial performance and applied the data of 117 corporates on the Tehran Stock Exchange (TSE) in a 5-year time horizon (2002-2007). The results of the study demonstrated that capital structure influences financial performance. The significance of the influence of capital structure on performance respectively belonged to measures of adjusted value, market value and book value.

Dehnavi and Hosseinzade (2013), analyzed the effect of capital structure on the performance of the listed companies on the Tehran Stock Exchange. The main hypothesis of this study is as follows: There is a significant relationship between capital structure of the firms and their performance. The specific hypothesis of this study is that there is a relationship between capital structure proxies (total debt to total asset, debt to the book value of the owner's equity and debt to the market value of the owner's equity) and the firms' performance. Performance is considered as a dependent variable and is measured through data envelopment analysis (DEA) and the efficiency score is measured for the sample firms. The statistical sample includes sixty (60) firms during 2004-2009. Multivariate regression by using panel data is the method utilized to test the hypotheses. The findings revealed that there is a significant relationship between the ratio of debt to total assets and debt to the market value of the owner's equity. Additionally, there is no significant relationship between the ratio of the debts to the book value of the firms

and the efficiency. Managerial ownership percentage and efficiency are significantly related; while there is no significant association between institutional ownership and efficiency.

San and Heng (2011), investigated the relationship of capital structure and corporate performance of a firm before and during crisis (2007). The study focused on construction companies which are listed on the Main Board of Bursa Malaysia from 2005 to 2008. All the 49 construction companies were divided into big, medium and small sizes, based on the paid-up capital. The result showed that there is a relationship between capital structure and corporate performance and there is also evidence that there is no relationship between the variables investigated. For big companies, ROC with DEMV and EPS with LDC have a positive relationship whereas EPS with DC is negatively related. In the interim, only OM with LDCE has positive relationship in medium companies and EPS with DC has a negative relationship in small companies. In sum, the outcome revealed that there is a relationship between capital structure and corporate performance in selected proxies.

In a study, Balasang et al. (2013), empirically investigated the impact of capital structure on firm's performance. Multiple regression analysis were used in the study in estimating the relationship between the leverage level and firm's performance. Using four of accounting-based measures of financial performance (i.e. return on equity (ROE), return on assets (ROA), market value of equity to the book value of equity (MBVR), Tobin's Q), and based on a sample of 85 firms listed on Tehran Stock Exchange from 2006 to 2011. The results indicated that firm performance, which is measured by (ROE, MBVR & Tobin's Q) is significantly and positively associated with capital structure, while reporting a negative relation between capital structure and (ROA, EPS). Altogether, the study provides evidence that indicates firm performance is positively or even negatively related to capital structure.

Bagheri et al. (2012), investigated the impact of capital structure on the financial performance of companies listed on the Tehran Stock Exchange. For this purpose, they studied and tested a sample of 400 firms among Companies Listed on the Tehran Stock Exchange in the form of 12 industrial groups during the years 2006 to 2010. In this study, variables of return on assets ratio (ROA) and return on equity ratio (ROE) used to measure the financial performance of companies. Results suggested that there is a significant negative relationship between debt ratio and financial performance of companies, and a significant positive relationship between asset turnover, firm size, asset tangibility ratio, and growth opportunities with financial performance measures. But the relationship between ROA and ROE measures with the firm age is not significant. Also, some of the studied industries have effects on firm performance. In addition, research results showed that by reducing debt ratio, management can increase the company's profitability and thus the amount of the company's financial performance measures and can also increase shareholder wealth.

Ajlouni and Shawer (2013), aimed at exploring the relationship between the capital structure and the profitability (measured by ROI, ROE and NPR) of the petrochemical industry firms in the Kingdom of Saudi Arabia, and the direction of this relation for the targeted firms during the period 2008-2011. The researchers used the simple regression model to estimate the relationship between the independent variable (Debt Ratio) and the measures of the dependent variable (Profitability ratios), this was done by using the Cross Section – Time Series (Panel Data) since it is appropriate for the nature of data (group of firms for a multiple years). The results revealed that there's no significant relationship between capital structure and ROI and ROE, while it showed a very weak relationship with NPM. This means that the profitability performance of the petrochemical industry firms in KSA is not relevant to capital structure, and there are other factors that affect the profitability of these firms.

Muritala, (2012, examined the optimum level of capital structure through which a firm can increase its financial performance using annual data of ten firms spanning a five-year period. The results from Im-Pesaran-Shin unit root test showed that all the variables were non-stationary at level. The study hypothesized negative relationship between capital structure and operational firm performance. However, the results from Panel Least Square (PLS) confirmed that asset turnover, size, firm's age and firm's asset tangibility are positively related to firm's performance. Findings provide evidence of a negative and significant relationship between asset tangibility and ROA as a measure of performance in the model. The implication of this is that the sampled firms were not able to utilize the fixed asset composition of their total assets judiciously to impact positively on their firms' performance. Hence, this study recommends that asset tangibility should be a driving factor to capital structure because firms with more tangible assets are less likely to be financially constrained.

Numerous attempts to explain the influence of debt policy on firm profitability have yielded inconclusive results. However, empirical evidence from some previous studies seems to be consistent with the pecking order theory. Most studies found a negative relationship between profitability and leverage. A summary of such studies will follow below.

2.2.2 Empirical evidence of negative association between leverage and firm profitability

According to Norvaisiene (2010) the research evidenced that the higher financial indebtedness level affects negatively the profitability ratios of companies in the Baltic countries; also both financial and non-financial debts reduce the liquidity of the companies. It was also found that the influence of the debts on the efficiency of asset management is ambivalent: financial debt has a negative impact on capital asset turnover and total asset turnover, but higher level of non-financial debts leads to higher level of the turnover indicators.

According to Skopljak and Luo (2012), at relatively low levels of leverage an increase in debt leads to increased profit efficiency hence superior bank performance, at relatively high levels of leverage increased debt leads to decrease profit efficiency as well as bank performance. This can most likely be attributed to financial distress outweighing any gains made from managerial performance improving.

Hosseini et al (2012) stated that there is a negative and meaningful relationship between the capital structure and the variables of value based performance assessment including Economic Value Added (EVA), Market Value Added (MVA), Cash Value Added (CVA) in 219 companies listed on Tehran Stock Exchange within a time period of 5 years from 2007 to 2011.

Kajola and Onalapo (2010) stated that a firm's capital structure surrogated by Debt Ratio, DR has a significantly negative impact on the firm's financial measures (Return on Asset, ROA and Return on Equity, ROE). The study by these findings, indicate consistency with prior empirical studies and provide evidence in support of the Agency cost theory.

Iddirisu (2011) also found , that there was a negative relationship between leverage and size, and between leverage and profitability, contrary to theoretical prediction; that the firms with tangible fixed assets would employ high levels of leverage since tangible fixed assets have a high collateral value, and firms with growth opportunities would take on debt to finance growth, but large and profitable firms would use less debt or no debt at all in their capital structure, which is inconsistent with theory; and that, most of the companies did not employ long-term debt.

Amara and Aziz (2014), conducted a study to mainly analyze the relationship of capital structure and its effect on company's performance. Sample included 33 listed companies from food sector of Pakistan. Debt ratios including debt to equity, short term debt to total assets and long term debt to total assets have been used as explanatory variables while return on assets

and earnings per share have been used as proxy of performance. Assumption of multicollinearity, heteroskedasticity, contemporaneous correlation and auto correlation have been tested and based upon the results PCSE along with Prais-Winsten regression has been used. Results of regression analysis revealed negative relation of capital structure ratios with performance while among these, only debt to equity ratio has a significant effect on company's performance. The negative relation of capital structure ratios led to the conclusion that the food sector was not properly utilizing debt in its capital structure and financial analysis need to find an optimal mix of debt and equity for maximization of company's profits.

A study by Awunyo and Badu (2012), empirically investigated the relationship between capital structure or leverage and performance of listed bank in Ghana from 2000 to 2010. Data was collected from Ghana stock exchange and annual report of the listed banks. Panel regression methodology was used to analyze the data. The result revealed that the banks listed on the Ghana Stock Exchange are highly geared and this is negatively related to the banks performance. The study showed that there is high level gearing among listed banks. This can be attributed to their over dependency on short term debt as a result there was a relatively high lending rate by the Bank of Ghana and low level of bond market activities. The regression result also revealed that capital structure is inversely related to performance of the listed bank in terms of return on Equity and Tobin's q.

Aghajari and Espireh (2014), in the first time period (2000 – 2006) found no association found between capital structure and financial performance while in the second period (2007 – 2011), a negative significant relation between Return on Assets and Debt to Assets, as well as between Return on Equity and long term debt to common equity was found.

Chechet and Olayiwola (2014), examined capital structure and profitability of the Nigerian listed firms from the Agency Cost Theory perspective with a sample of seventy (70) out of a

population of two hundred and forty-five (245) firms listed on the Nigerian Stock Exchange (NSE) for a period of ten (10) years: 2000 - 2009 with the aid of the NSE Fact Book covering the period under review. Panel data for the firms were generated and analyzed using fixed-effects, random-effects and Hausman Chi Square estimations. Two independent variables which served as surrogate for capital structure were used in the study: debt ratio, DR and EQT with profitability (PROF) as the only dependent variable. The result showed that DR is negatively related with PROF, the only dependent variable but EQT is directly related with PROF. The study by these findings, indicate consistency with prior empirical studies and provide evidence against the Agency Cost Theory.

Kosimbei et al. (2014), argued that corporate failure among companies in Kenya has often been associated with the financing behaviour of the firms. Momentous efforts to revive the ailing and liquidating companies have focused on financial restructuring. A great dilemma for management and investors alike is whether there exists an optimal capital structure and how various capital structure decisions, both short-term and long-term, influence business performance. Therefore, in their study they investigated the relationship between capital structure and performance of non-financial companies listed on the Nairobi Securities Exchange (NSE), Kenya. The study employed an explanatory non- experimental research design. A census of 42 non-financial companies listed on the Nairobi Securities Exchange, Kenya was taken. The study used secondary panel data contained in the annual reports and financial statements of listed non-financial companies. The data were extracted from the Nairobi Securities Exchange hand books for the period 2006-2012. The study applied panel data models (random effects). Feasible Generalized Least Square (FGLS) regression results revealed that financial leverage had a statistically significant negative association with performance as measured by return on assets (ROA) and return on equity (ROE). The study

recommended that managers of listed non-financial companies should reduce the reliance on long term debt as a source of finance.

Tian and Zeitun (2007), investigated the effect which capital structure has had on corporate performance using a panel data sample of 167 Jordanian companies during 1989-2003. The results showed that a firm's capital structure had a significantly negative impact on the firm's performance measures, in both the accounting and market's measures. They also found that the short-term debt to total assets (STDTA) level has a significantly positive effect on the market performance measure (Tobin's Q). The Gulf Crisis 1990-1991 was found to have a positive impact on Jordanian corporate performance while the outbreak of Intifadah in the West Bank and Gaza in September 2000 had a negative impact on corporate performance.

Alsawalhal and Shubita (2012), sought to extend Abor's (2005), and Gill, et al., (2011) findings regarding the effect of capital structure on profitability by examining the effect of capital structure on profitability of the industrial companies listed on Amman Stock Exchange during a six-year period (2004-2009). The problem statement to be analyzed in this study was: Does capital structure affect the Industrial Jordanian companies? The study sample consisted of 39 companies. Applying correlations and multiple regression analysis, the results revealed significantly negative relation between debt and profitability. This suggested that profitable firms depend more on equity as their main financing option. Yet recommendations based on the findings are offered to improve certain factors like the firm must consider using an optimal capital structure and future research should investigate generalizations of the findings beyond the manufacturing sectors.

Pratheepkanth (2011), attempted to identify the impact of capital structure on companies performance, taking into consideration the level of companies financial performance. The researcher analyzed capital structure and its impact on financial performance capacity of

business companies in Sri Lanka during 2005 to 2009 (5 years). The results showed that the relationship between the capital structure and financial performance was negative at -0.114. Co-efficient of determination was 0.013. F and t values were 0.366, -0.605 respectively. It is reflecting the insignificant level of the business companies in Sri Lanka. Hence business companies mostly depend on the debt capital and they therefore have to pay more interest.

Anthony and Chinaemerem (2012) examined the impact of capital structure on financial performance of Nigerian firms using a sample of thirty (30) non-financial firms listed on the Nigerian Stock Exchange during the seven year period, 2004 – 2010. Panel data for the selected firms were generated and analyzed using ordinary least squares (OLS) as a method of estimation. The result showed that a firm's capital structure surrogated by Debt Ratio, DR, has a significantly negative impact on the firm's financial measures (Return on Asset, ROA, and Return on Equity, ROE). The findings of this study, indicate consistency with prior empirical studies and provide evidence in support of Agency cost theory.

Abbadi and Abu-Rub (2012), aimed at finding the relationship between the market efficiency and capital structure of Palestinian financial institutions. The study establishes a model to measure the effect of capital structure on the bank efficiency measured by ROE, ROA, Total deposit to assets, total loans to assets and total loans to deposits were used to measure capital structure. It is found that leverage has a negative effect on bank profits, an increase in each ROA and Total Deposit to Assets increases bank efficiency. Abbadi and Abu-Rub (2012), also tested the effect of the above variables on bank market value measured by Tobin's Q and found that leverage has a negative effect on market value of the bank. In addition, the study revealed a positive and strong relationship between market value and ROA on the one hand and bank deposits to total deposits on the other hand.

Leon (2013), stated that capital structure is the most significant discipline of company's

operations. Capital structure decision is a vital decision with great implication for the firm's sustainability. The ability of the organization to carry out their stakeholders need is closely related to the capital structure. The determination of a company's capital structure is a difficult task to achieve. The researcher empirically investigated the relationship between capital structure and the financial performance of listed manufacturing firms in Sri Lanka from 2008 to 2012. Financial performance was measured in terms of accounting profitability by Return on Equity (ROE) and Return on Assets (ROA). About 30 listed manufacturing firms were selected as sample. The findings revealed that, there was a significant negative relationship between leverage and return on equity while there was no significant relationship between leverage and return on assets. The researcher also suggested that future research work based on this study be conducted in order to identify the optimum capital structure that leads to higher performance in Sri Lanka.

Indhumathi and Pallanivelu (2013), attempted to analyze the impact of Capital structure on the financial performance of selected textile companies. For the accomplishment of the objective, the data was collected from the annual reports for ten years. The collected data was analyzed and computed to fit for drawing inferences; this study utilized various ratios, correlation and compounded growth rate. The results revealed that there exists a negative relationship between capital structure and financial performances. It is reflecting the insignificant level of the business companies in Sri Lanka. Hence business companies mostly depend on the debt capital and they therefore have to pay more interest.

Rakesh (2013), stated that capital structure is the most significant discipline of company's operations. The study constitutes an attempt to identify the impact of capital structure on company performance, taking into consideration the level of company financial performance. The analysis has been made on the capital structure and its impact on financial performance

capacity during 2009 to 2012 (3 years) financial years of business companies in India. The results showed that the relationship between the capital structure and financial performance is having a negative association. It is reflecting the insignificant level of the business companies in India. Hence, business companies mostly depend on the debt capital and they therefore have to pay more interest.

Taani (2013), empirically investigated the relationship between capital structure and firm performance across different industries using a sample of Jordanian manufacturing firms in Jordan. The annual financial statements of 45 manufacturing companies listed on the Amman Stock Exchange were used for this study which covers a period of five (5) years from 2005-2009. Multiple regression analysis was applied on performance indicators such as Return on Asset (ROA) and Profit Margin (PM) as well as Short-term debt to Total assets (STDTA), Long-term debt to Total assets (LTDTA) and Total debt to Equity (TDE) as capital structure variables. The results showed that there is a negative and insignificant relationship between STDTA and LTDTA, and ROA and PM; while TDE is positively related with ROA and negatively related with PM. STDTA significantly impacts ROA while LTDTA significant impacts PM. The study concluded that statistically, capital structure is not a major determinant of firm performance. It recommended that managers of manufacturing companies should exercise caution when choosing the amount of debt to use in their capital structure as it affects their performance negatively.

According to Ahmed at al. (2013), literature on capital structure suggests that a firm's capital structure play an important role in determining its future growth, sustainability and financial performance. It is observed that investors are highly interested in the performance of firms listed in the stock market. Empirical evidence gives little indication of identifying the casual relationship between capital structure of a firm and its financial performance, However it is

generally believed that transactions and bankruptcy costs play a vital role in the choice of debt to equity financing. Debt/Equity ratio is commonly used as a measure of capital structure, while other ratios like (Earning per Share, Price/Earnings Ratio, Operating profit Margin, Return on Asset, Return on equity) are used as proxies for firm performance. These ratios were used to study the relationship between capital structure and firm performance in the context of large private companies in Pakistan. A total of 83 companies were selected from KSE 100 index for their analysis. Findings of the study suggested that financial performance of firms is significantly affected by their capital structure and the relationship between the two variables is negative in nature. Moreover capital structure of a firm is negatively related to its market value and also increases its risk level as the share of debt increases in the capital mix.

Arulvel and Tharmila (2013), examined the relationship between capital structure and financial performance of the listed companies traded on the Colombo stock exchange (CSE). The common approach in empirical studies has been to examine the relationship between capital structure and financial performance. Problem of this research was to study how the capital structure negatively or positively influences on signaling the firm's performance. The sample of this study composed of thirty companies listed on the Colombo Stock Exchange over a period of 5 five years from 2007 to 2011. The required data and information for the study were gathered from published annual reports, Facebook, and website of listed companies in CSE from 2007 to 2011. The relationship between independent variable capital structure and dependent variable financial performance were tested by correlation analysis. It is focused on the overall point of view of the relationship between the capital structure and financial performance. The study found a negative relationship between the capital structure and financial performance.

Aghajari and Espireh (2014), argued that of the most controversial issues before companies, which is the most critical decision as to their survival, is a decision about capital structure. The purpose of the study was to investigate the impact of capital structure on corporate financial performance. The population in this study consisted of 340 companies listed on the Tehran stock exchange (TSE) in two 5-year time periods during (2002-2006), and (2007-2011). Multivariate regression was used for data analysis. In this , capital structure (debt to asset ratio (DA), short term debt to asset ratio (SDA), long term debt to asset ratio (LDA), debt to common equities ratio (DCE), long term debt to common equities (LDCE), and short term debt to common equities ratio (SDCE) was considered as the independent variable, and financial performance (capital returns (ROC), return on equities (ROE), return on assets (ROA), and earnings per share (EPS) was the dependent variables. Results indicated that in the first time period (2002-2006), no association was found between the variables capital structure and financial performance, while in the second period (2007-2011), there was a negative, significant relation between the variables ROA and DA, as well as between the variables ROE and LDCE.

Basically, the implication of the above empirical results is that, profitable firms use less debt in funding their operations.

2.2.3 Empirical evidence of positive association between leverage and firm profitability

Despite the above empirical works supporting the pecking order theory, some authors are of a different opinion. These authors observed a positive relationship between profitability and debt levels in their studies.

Akhtar and Mujahid (2014), evaluated the impact of capital structure on the firm's financial performance and shareholders wealth in the textile sector of Pakistan. They conducted regression analysis on a sample data of 155 textile firms for the year 2006 to 2011. The overall

textile sector ROA, ROE and EPS ratios were used as accounting measures to evaluate the impact of capital structure on the firm's financial performance and shareholders wealth. The results showed that the capital structure positively impact the firm's financial performance and shareholders wealth.

Akhtar and Javed (2012), explored the relationship between the capital structure and financial performance, using evidence from 21 industries on the Karachi stock exchange in Pakistan. The study analyzed capital structure and its impact on financial performance during period 2004 to 2008 (5years) covering 21 industries on KSE. The study empirically investigated the relationship between the capital structure and financial performance, by using correlation and regression test on financial data which is collected from analysis reports of KSE, Balance sheet analysis and financial statements of 21 sectors. The results have several significant implications. The findings of the study showed a positive relationship between the leverage, financial performance and growth, size, of the companies by accepting the alternate hypothesis H1 and rejecting Ho.

Moscu (2014), examined the relationship that is established between capital structure and profitability of company for a sample of 53 companies listed on the Bucharest Stock Exchange during 2010-2012. The results indicated that firm's performance, which is measured by ROA, ROE, RCA and MBR is significantly influenced by the degree of capital structure. Overall, in Moscu's study you may observe that firm's performance expressed by the Economic Return is positively influenced by the capital structure degree and it is expressed by the financial ratios such as ROE, net sales margin rate, RCA Earnings per share - EPS, Market to Book Ratio whereas MBR is negatively affected by capital structure.

Himani and Kumar (2014), examined the capital structure of selected construction companies in India during the period 2009 to 2013. Emphasis was placed on the impact of capital structure

on the financial performance of Indian construction companies listed on the Bombay Stock Exchange. For the study purpose, the data has been collected from secondary sources i.e. from the annual reports of the selected sample companies. Multiple Regression and correlation were used to analyze the data. The variables used for the study are Debt Equity Ratio, Long term debt and Debt Asset Ratio as the independent variable and Gross Profit Margin (GPM), Net Profit Margin (NPM), Return on Capital Employed (ROCE), Return on Assets (ROA) and Return on Equity (ROE) as the dependent variables. The results revealed that there is a positive relationship between the capital structure and financial performance of the selected firms.

Goyal (2013), studied the impact of capital structure on profitability of public sector banks in India listed on national stock exchange during 2008 to 2012. Regression analysis has been used for establishing relationship between Return on Equity, Return on Assets & EPS with capital structure. The findings revealed a positive relationship between short term debt and profitability as measured by ROE, ROA & EPS.

2.3 Summary

In summary, the researcher has critically reviewed relevant theories developed by different scholars as well empirical results of studies conducted over the years. All the theories and empirical evidence cited in the above literature review were logically cross referenced to a list of references at the end of this study document. The theoretical review mainly focused on the following key theories: Modigliani and Miller theory (Modigliani and Miller, 1958); Trade-off theory (Modigliani and Miller, 1963); Agency cost theory (Jensen and Meckling, 1976) and Pecking order theory (Myers and Majluf, 1984).

The researcher's review of the empirical analysis above revealed that an examination of the relationship between capital structure and financial performance does not always produce the same results. From the foregoing discussions based on the available empirical literature, it is

evident that results from investigations into the relationship between capital structure and profitability are inconclusive, and requires more empirical work. The results seem to be different depending on the economy, sector, the size of the firm and the time period. There is thus a need for further research on this topic.

CHAPTER 3 : METHODOLOGY

3.1. Introduction

This chapter give a description of the research methodology adopted for this study broken down into the following sections: Research design; population and sample, procedures and data analysis.

3.2 Research design

The study was based on secondary data. The researcher conducted a quantitative study which entails a review of audited annual financial statements of all firms listed on the Namibian Stock Exchange (NSX) covering the period from 2010 to 2013. The choice of audited annual financial statements as basis for the study is due to the reliability and availability of financial statements of listed firms.

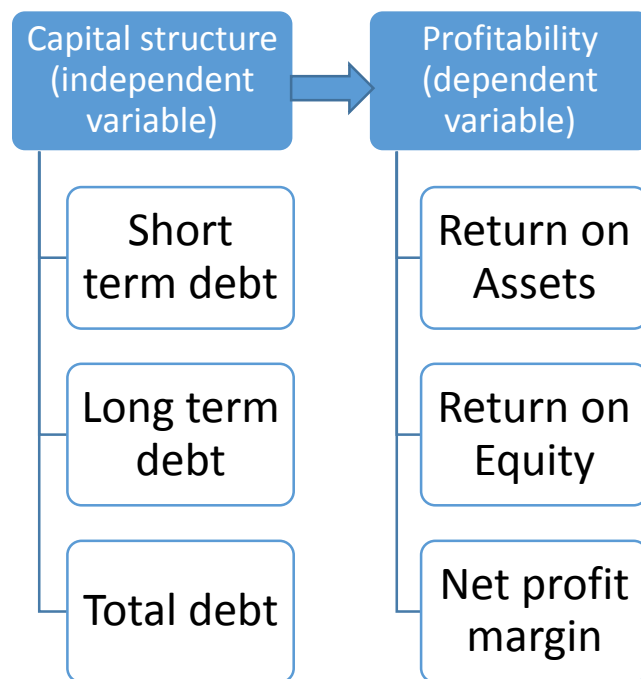
In order to achieve the set objectives of the study the researcher employed statistical analytical tools specifically using the panel data methodology. The panel data model was adopted because of the potential it has in effectively addressing the objectives of the study. It is therefore clear that the methodology that was employed for this work is quantitative and of panel data form.

According to Baltagi (2005), panel data involves the pooling of observations on a cross-section of units over several time periods and provides results that are not detectable in pure cross-sections or pure time-series studies. Panel data gives more informative data, more variability, less collinearity among variables, more degrees of freedom and more efficiency. It controls for individual heterogeneity due to hidden factors and gives better ability to study dynamics of adjustments and identify effects that are simply not detectable in pure cross-section or pure time-series data. Baltagi (2005), further stated that panel data enables researchers to construct and test more complicated behavioral models than cross-section or time-series data.

Estimation of panel data models using pooled Ordinary Least Squares (OLS) yields inconsistent estimators and heteroscedasticity errors. Furthermore, if the parameters to be estimated differ across firms and/or over time, then a pooled regression is not appropriate because the heterogeneity in the parameter estimates is not effectively dealt with (Chang and Lee, 1977).

From a theoretical perspective, Hsiao (1986, p. 5) demonstrates that “ignoring such parameter heterogeneity among cross-sectional or time-series units could lead to inconsistent or meaningless estimates of interesting parameters”. To resolve this problem, it is therefore appropriate to use panel data models. Panel estimation methods including the fixed effect and random effect methods are commonly used in estimating heteroskedastic consistent estimators. The basic difference between the above mentioned estimation techniques is based on the assumptions about the relationship between the error term and the covariates. The choice of the estimation procedures above is informed by the deficiencies with pooled Ordinary Least Squares. If there is a correlation (fixed effects), we would obtain the consistent estimation by means of the within-group estimator. Otherwise (random effects) a more efficient estimator can be achieved by estimating the equation by Generalized Least Squares (GLS).

Based on the objectives of the study and the review of empirical evidence above, the following conceptual framework was developed:



From the conceptual model above, it is formulated that profitability is a function of capital structure as follows: $P = f(CS)$ where P stands for profitability and CS stands for capital structure. Two variable groups were used in the study. These are dependent and independent variables.

3.2.1 The independent variable

To resolve the challenge of omitted variables, three most widely and accepted debt ratios used in the present profitability/debt policy literature were employed in the study as proxies for the independent variable. These are the ratio of short-term debt to total capital, the ratio of long term debt to total capital, and the ratio of total debt to total capital (see Taub, 1975; Abor, 2005; and Amidu, 2007). These ratios are discussed in turn.

The ratio of short-term debt to total capital is the first leverage ratio employed in the study as one of the explanatory variables. It seeks to determine the extent to which firms in Namibia use short-term debt to finance their operations and how this category of debt associates with firm's profitability for the chosen period of the study.

The ratio of long-term debt to total capital is another debt ratio used in the study as an explanatory variable. It purports to determine the extent to which firms in Namibia use long-term debt to finance their operations and how this category of debt associates with profitability for the chosen period of the study. In the study, long-term debt is defined as the total liabilities of the firms payable beyond one year and will be computed as the sum of creditors, accruals (including deferred taxes and other liabilities payable beyond one year), and borrowings. The ratio of total debt to total capital is the third ratio used as an independent variable in this study and it is defined as a sum of the short-term and long-term to total capital. Table 1 below shows the formulas for calculating the explanatory variables.

Table 1

Explanatory variables	Formula
The ratio of short-term debt to total capital (STD)	The sum of the short-term divided by total assets
The ratio of long-term debt to total capital (LTD)	The sum of the long-term divided by total assets
The ratio of total debt to total capital (TD)	The sum of the short-term and long-term divided by total assets

3.2.2 The dependent variable

Previous work has indicated that return on asset (ROA), return on equity (ROE) and profit margin (PM) are the indicators of company profitability. It is for this reason that these profit related ratios will be used to construct the company financial performance measures. They will

serve as the main outcome and proxies for the dependent variable for this research. Table 2 below shows the formulas for calculating the dependent variables.

Table 2

Dependent variable	Formula
Return on Equity (ROE)	EBIT divided by Total Equity multiplied by 100
Return on Assets (ROA)	Profit after tax divided by Total Assets multiplied by 100
Profit Margin (PM)	Profit after tax divided by Turnover multiplied by 100

EBIT represents earnings before interest and tax of which the formula is Profit before tax plus Interest paid (Finance charges). The interest paid in respect of banks is not added back to profit before tax when calculating the earnings before interest and tax.

As mentioned before, the selection of variables was mainly guided by their theoretical importance and empirical evidence, but coupled with the purpose and objectives of this research. These variables/concepts and their definitions are well known and are based on international standard drawn from financial management practices and surveys.

3.3 Population and sample

All firms listed on the Namibian Stock Exchange (NSX) as at 30 April 2014 constituted the target population for this study. Information for a four year period starting from 2010 to 2013

was collected from the websites of the respective firms and analyzed using statistical techniques. Firstly, firms were eliminated from the sample under the following circumstances: do not have a website; website is not accessible and the website is under construction. Secondly, firms with valid and active official website but do not disclose the financial information at all or the financial information disclosed is not sufficient i.e. not for the required four year period, were eliminated from the sample. Of all the 32 listed firms only 27 have websites that contain the required financial results for the period 2010 to 2013. The sample thus consisted of 27 firms listed on the NSX which represents 84% of the target population. It can thus be said that the sample is representative of the target population.

This research deals with panel data, it is therefore important to use at least one or two lagged variable that was used in all waves. It is for this reason that the NSX was used for this purpose since it has all the variables and requirements needed for this research. So only NSX company population was picked. Even though the OLS seems to include the attrition and missing data in the analysis. For the multilevel analysis the ID variable was used to filter and analyze only those that make it through for 4 waves successfully. The xtset functions in strata was used for this purpose. When the researcher used the xtset function on the the data, he noted that there was an unbalanced panel with gaps and decided to remove some of the sample reducing the sample to only 21 from a possible 27.

3.4 Procedures

The data was collected by first accessing the NSX website which in turn provides links to the websites of the listed companies. On the specific websites, the capital structure and financial performance information could be obtained from the Statement of financial position (Balancesheet) and the Statement of comprehensive income (Incomestatement) respectively. The total assets, total debt, short term debt, long term debt, total assets and

equity were sourced from the Balancesheet whereas the turnover (sales/income), earnings before interest and tax (EBIT) and profit after tax (basic earnings) were obtained from the Incomestatement. In cases where there is no clear distinction between current liabilities and non-current liabilities, the notes to the annual financial statements were used to establish whether the liability is current (short term debt) or non-current (long term debt).

3.5 Data analysis

The data analysis part is divided into two main sections namely descriptive and multivariate analysis.

3.5.1 Descriptive analysis

Descriptive statistics are used to describe the basic features of the data. The focus of this section however will be mainly on the bivariate analysis. This section therefore will present the bivariate statistics on profit related variables and capital structure. These statistics will include correlation as well. All frequencies tables will also be given.

3.5.2 Multivariate Analysis

According to Field, A. (2009), unlike descriptive statistics which are simply describing what the data are or what the data show, Multivariate analysis is mainly used for inferential statistics.

For this reason one of the multivariate statistical techniques, called linear regression analysis, was used to provide full explanation as to whether or not each variables (Xs) or capital structures used in the model have any influences on (Y) or company profitability. About 3 variables, as noted above were used to determine this influence and by how much on the

outcome variable as well as to accurately measure and predict such effects. Linear regression technique were used because the outcome variable in use will be a continuous variable. Three models were produced to predict the return on equity, return on assets and the net profit margin. To analyze the relationship between capital structure and firm's performance, the estimation procedure used by Kuznetsov and Muravyev (2001) was adopted and modified as follows:

$$Y_{it} = \alpha_i + \beta_1 X_{it} + \epsilon_{it}$$

Where,

- Y_{it} is performance measure,(ROE, ROA and NP)
- α_i = refers to time-invariant firm-specific effects
- X_{it} are the independent variables (STD, LTD and TD)
- β_1 coefficients
- ϵ_{it} is a random disturbance (error term).

3.5.3 Data transformation and Assumptions test

Before data analysis the data set was reshaped from (wide to long). All the data point were pooled together and also nested within their respective group. By so doing it is easy with data cleaning and recoding as well.

The following variables were selected to answer the research question, they are debts (X1, X2, X3) and profit (Y1, Y2, Y3). The outcome variables of this study are a continuous variable (Y1, Y2, and Y3). One assumption for linear regression is that variables that are used must be normally distributed.

Please see appendices, sample characteristics, data transformation and assumptions test.

Before analysis the assumption assessment was conducted as follows:

- The Ys are all normally distributed.
- There is no multicollinearity.
- All the Ys are all continuous variables.
- There are no outliers in the data.

3.5.4 Modelling selection strategy

Three models were produced for each variable Ys and the selection of the final model was based on the theoretical argument (the weakness of OLS, Fixed and Random) and by the Scientific-hausman tests.

According to the literature, the Hausman test is a statistical test used to evaluate the significance of an estimator versus an alternative estimator. It helps one evaluate if a statistical model corresponds to the data. “Hausman test” tests the null hypothesis that the coefficients estimated by the (efficient) random effects estimator are the same as the ones estimated by the fixed effects estimator against the alternate that they are not. If they are (i.e. they have an insignificant P-value, $\text{Prob} > \chi^2$ larger than .05) then it is acceptable to use random effects.

CHAPTER 4 : RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter aims to present the findings of this research and it is divided into four sections namely: descriptive analysis; correlation analysis; fixed & random effect model and regression analysis.

As per the results in Chapter 4 of the document, the analysis was divided into two main sections namely descriptive and multivariate analysis. Descriptive statistics are used to describe the basic features of the data. The focus of Table 3 and Table 4 is a presentation of the descriptive statistics whereas Table 5 presents the outcome of the correlation analysis. This section therefore will present the bivariate statistics on profit and capital structure variables including correlation analysis.

Tables 6 to 8, unlike descriptive statistics which are simply describing what the data is or what the data shows, presents multivariate analysis which is mainly used for inferential statistics, whereby one is trying to reach conclusions that extend beyond the immediate data alone. For this reason one of the multivariate statistical techniques, called linear regression analysis was used to provide full explanation as to whether or not each variable (X) or capital structure used in the model have any influences on (Y) or company profitability. As explained in the Research design section of this study, capital structure comprises of the ratio of short-term debt to total capital, the ratio of long term debt to total capital, and the ratio of total debt to total capital. Based on previous work, company profitability on the other hand will be represented by return on asset, return on equity and profit margin.

4.2 Descriptive analysis

As explained in chapter 3 of this document, descriptive statistics are used to merely describe the basic features of the data in a study by Rumsey (2011).

Table 3

Variable	Observations	Range	Minimum	Maximum	Mean	Standard deviation
STD	84	.6041	.0065	.6106	.1621	.158
LTD	84	.9013	.0133	.9146	.5076	.341
TD	84	.8207	.1330	.9538	.6710	.253
ROE	84	.6380	-.1751	.4629	.0812	.114
ROA	84	.5410	-.2098	.3312	.0484	.084
PM	84	1.4625	-.9371	.5254	.1032	.207

Table 4**All company Pooled means**

Year	Average of Short-term	Average of Long-term	Average of Total D	Average of Return on Equity	Average of Return on Asset	Average of Profit Margin
2010	17%	50%	67%	9%	5%	11%
2011	16%	51%	67%	9%	6%	13%
2012	17%	50%	67%	8%	5%	10%
2013	15%	52%	67%	6%	4%	7%
Grand Total	16%	51%	67%	8%	5%	10%

Table 3 gives a summary of the descriptive statistics for both the dependent- and independent variable for the sample of the firms. It shows that the ROE has an average value of 0.0812 and a standard deviation of 0.114 for the sample whereas the ROA has an average value of 0.0484 and a standard deviation of 0.84. The table further shows that PM has an average value of 0.1032 and a standard deviation of 0.207.

The first profitability ratio, ROE, measures the ability of a firm to generate earnings from its shareholder investments in the company. Based on the audited financial statements of firms listed on the NSX for the period 2010 to 2013, the average ROE was 8%. This means that for every N\$100 of the shareholders investments, earnings of N\$8.12 was generated.

However it is important to state that some of the listed firms have recorded losses over the period under review as indicated by the minimum ROE which is a negative of about 17%.

The return on assets measures the effective use of all the assets to generate earnings during a period. A higher ROA indicates that management has effectively utilized the firm assets to generate earnings. The average ROA for firms listed on the NSX for the period under review was only 4.8%. This implies that for every N\$100 invested in assets, earnings of N\$4.80 was generated.

The average STD is 0.1621 with a standard deviation of 0.158. LTD has an average (mean) of 0.5076 and a standard deviation of 0.341. The highest LTD is 0.9146 and the lowest is 0.0133. Total Debt which is the total of STD and LTD shows an average value of 0.6710 and a standard deviation of 0.253. This indicates that on average firms listed on the NSX are highly geared with 67% of the assets being finance with debt. So, listed firms in Namibia are mainly using long-term debt to finance their assets.

Table 4, is a presentation of all company pooled means for the sample for each year from 2010 to 2013. The averages (means) for the period are 16%, 51%, 67%, 8%, 5% and 10% for STD, LTD, TD, ROE, ROA and PM respectively.

4.3 Correlation analysis

Correlation is concerned with describing the strength of a relationship between two variables. In this study the correlation co-efficient analysis is under taken to find out the relationship between short-term debt, long-term debt, total debt, return on equity, return on assets and the profit margin. According to Chechet and Olayiwola (2014), in research, the common aim of carrying out a correlation test that relates with regression is to determine whether a collinearity exists among the independent variables employed in the study or not, because it is capable of

distorting the true picture of the relationship of the dependent and independent variables. Given this study, the idea behind the correlation test is to examine the relationships among the three independent variables: short-term debt, long-term debt and total debt amongst themselves debt ratio as well as their relationships with the dependent variables namely return on equity, return on assets and profit margin. This is so necessary so that we obtain a broader picture than we could have when independent variables were regressed individually against profitability.

Table 5**Pearson Correlation matrix amongst the variables**

Variable	STD	LTD	TD	ROE_NL	ROA_NL	PM_NL
STD	1	-.711**	-.335**	.611**	.572**	-.490**
	.000	.000	.002	.000	.000	.000
LTD	-.711**	1	.900**	-.896**	-.870**	.260*
	.000	.000	.000	.000	.000	.017
TD	-.335**	.900**	1	-.823**	-.811**	.047
	.002	.000	.000	.000	.000	.673
ROE_NL	.611**	-.896**	-.823**	1	.962**	-.125
	.000	.000	.000	.000	.000	.257
ROA_NL	.572**	-.870**	-.811**	.962**	1	-.041
	.000	.000	.000	.000	.000	.712
PM_NL	-.490**	.260*	.047	-.125	-.041	1
	.000	.017	.673	.257	.712	

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

*Correlation is significant at 0.05 level (2-tailed)

Table 5, studies 6 interval-level variables and estimates the relationship among all of them. In this study, correlation analyses provide early sign that STD, LTD and TD are significantly related to both ROE and ROA while only STD seems to be significantly related to PM. Both LTD and TD do not seem to be significantly related to PM (corr=0.260,

p-value = 0.017; corr = 0.047, p-value = 0.673). The analyses also shows that there is significant correlation between LTD and TD (corr = 0.900, p-value = 0.000). In addition, STD and TD also seem to be significantly related (corr = -0.335, p-value = 0.002). The correlation coefficient between TD and LTD is more than 0.8 (80%) which indicates that there is a problem of multicollinearity between these two independent variables. This is an indication of possible multicollinearity problem. Due to the occurrence of multicollinearity between these two independent variables, the dependent variables were only regressed against STD and LTD as discussed in 5.4 below. In general, the correlations between variables appear to be too high because the study has deliberately adopted the use of alternative variables to resolve the challenge of omitted variables.

4.4 Fixed and random effect model

In order to choose between fixed and random effects model for model 1 (ROE), Hausman test was used. The null hypothesis of the Hausman test was that the random effects model was preferred to the fixed effects model. For ROE model, Hausman test reported a chi-square of 2.93 with a p-value of 0.2307 implying that at 10 percent level, the chi-square value obtained was statistically insignificant. The researcher therefore failed to reject the null hypothesis that random effects model was preferred to fixed effect model for ROE as recommended by Greene (2008). Similarly, in order to choose between the fixed and random effects models for model 2 (ROA), the Hausman test was used. Hausman test reported a chi-square value of 1.64 with a p-value of 0.4406 implying that the chi-square value was statistically insignificant at 10 percent level of significance. Hence the researcher did not reject the null hypothesis that random effects model was preferred to fixed effect model for ROA model as recommended by Greene (2008). Thus the researchers applied the models using random effects. Finally, in order to choose between the fixed and random effects models for model 3 (PM), the Hausman test

was used. Hausman test reported a chi-square value of 14.77 with a p- value of 0.0006 implying that the chi-square value was statistically significant at 10 percent level of significance. Hence the researcher rejected the null hypothesis that random effects model was preferred to fixed effect model for ROA model as recommended by Greene (2008). Thus the researchers applied the models using fixed effects.

4.5 Regression Analysis

It is very important to understand that this study used a panel data approach for regression. As a result the possibility that some uncertain variables that are time invariant (fixed in time) and entity specific may influence our predictor and thus misrepresent the coefficient estimated using the panel approach. A fixed effect model test was thus conducted to control fixed effect factors. A random effect test was also run to check whether the above-mentioned error terms are not correlated across each other.

Table 6 Return on equity with all the Xs

Variables	Coefficient	Standard error	z-statistics	R-squared
Constant	3.045157	.3035611	10.03	
STD	-0.0007519	.0073577	-0.10	
LTD	-.0289134	.0037745	-7.66	
R-squared				0.8028

Source: Generated from SPSS

Table 7 Return on assets with all the Xs

Variables	Coefficient	Standard error	z-statistics	R-squared
Constant	2.691346	.3162466	8.51	
STD	-.0043032	.0078461	-0.55	
LTD	-.0289541	.0038966	-7.43	
R-squared				0.7600

Source: Generated from SPSS

Table 8 Profit margin with all the Xs

Variables	Coefficient	Standard error	t-statistics	R-squared	F-value
Constant	4.965629	1.032421	4.81		
STD	-.0187825	.0201481	-0.93		
LTD	-.0437244	.015525	-2.81		
R-squared				0.0349	
F-value					4.60

Source: Generated from SPSS

Regression analysis is used to test the impact of capital structure on the financial performance of companies that were listed on the Namibian Stock Exchange during period under review. Financial performance is the dependent variable and capital structure is the independent variable. From a regression of the independent and dependent variables, the following relationships were found.

Table 6, shows that there is a weak negative relationship between Return on Equity and the two independent variables namely STD and LTD. An increase in STD by one percent will reduce return on equity by less than 1% whereas an increase in long-term debt by one percent will reduce ROE by 2.89%. The independent variables were significantly related with ROE based on R-square of 80.28% which suggest that approximately 80.28% of variation in the ROE could be explained by the independent variables.

Table 7 shows that there is a weak negative relationship between ROA and both STD and LTD. An increase in STD by one percent will reduce return on assets by less than 1% whereas an increase in long-term debt by one will reduce ROA by 2.89%. The independent variables were significantly related with ROA based on R-square of 76% which suggest that approximately 76% of variation in the ROA could be explained by the independent variables.

Table 8 indicates that the there is a weak negative relationship between PM and independent variables. An increase in STD by one percent will reduce PM by less than 2% whereas an increase in long-term debt by one will reduce PM by 4.37%. The independent variables were barely related with PM based on R-square of 3.49% which suggest that approximately 3.49% of variation in the PM could be explained by the independent variables.

4.6 Summary and conclusion

The study found that short term debt in Tables 6-8 as an independent variable for the relationship between capital structure and financial performance is statistically insignificant. So, what matters for firms listed on NSX is the long term debt as a determinant of firm financial performance. Using panel regression methodology, the results reveal that financial performance of firms listed on the NSX is negatively related to the long-term debt employed by the firms over the period 2010-2013.

The outcomes of the study are contrary to the Agency theory which is premised on its preference for higher debt in financing when agency problems become pronounced.

However, the outcomes are more in line with the Pecking order theory which advocates for using own capital first and only resort to debt financing when the first option is no longer possible.

The results are in line with Cassa and Holmes (2003), and Hall et al. (2004) who have found negative relationship between profitability and both long-term debt and short-term debt ratios. Furthermore, the findings of the study is consistent with Tian and Zeitun (2007) who have found that a firm's capital structure had a significantly negative impact on the firm's performance measures, in both the accounting and market's measures.

To some extent the outcomes of this study contradicts San and Heng (2011) who stated that there is also evidence that shows that there is no relationship between variables that were investigated. This is so because this study has found significant negative relationship between capital structure and financial performance. The fact that there is significant relationship between the variables disapproves to some extent the irrelevance theory developed by

(Modigliani and Miller,1958) which postulate that there is no relationship between capital structure and financial performance.

CHAPTER 5 : RECOMMENDATIONS AND CONCLUSIONS

5.1 Introduction

In this chapter, the researcher will make recommendation and conclusions based on the literature review, methodology and the outcome of this particular study.

This study has inherent limitations in the sense that it is limited to only public companies listed on the NSX. In addition, all the companies that were considered for this study, have different reporting dates and accounting policies. The study is only based on published financial statements during the period 2010 to 2013. This implies that the published financial statements by the same companies before 2010 are excluded from the study. Unlike in many other similar studies, this study has combined financial and non-financial firms.

5.2 Recommendations

Based on the outcome of the study, it is recommended that financial managers and directors of firms listed on the NSX exercise caution when considering debt as a financing options because it could have a negative impact on the profitability of the company. Although, the study was limited to only NSX listed firms, it is advisable that non-listed firms operating in the same geographical area, Namibia, must also carefully consider debt financing when confronted with a situation of having to make a choice between equity and debt financing. Considering the national problem in Namibia whereby it is constantly reported in the media that State-owned Enterprises (SOEs) are not profitable, it is recommended that a similar study be conducted to analyze the impact of capital structure on the financial performance of SOEs in Namibia. Such a study could serve as a reference point for policy makers, management and board of directors of SOE.

5.3 Conclusions

This study was conducted to analyze the impact of the capital structure on the financial performance of firms listed on the Namibian Stock Exchange. This is a quantitative study based

on secondary data obtained from published financial statements for the period 2010 to 2013. Although a review of the literature clearly suggests that many researchers have found a negative relationship between capital structure and financial performance, there is no conclusive evidence regarding the relationship between capital structure and financial performance because there are a few studies that found either positive association between capital structure and financial performance or no relationship at all. This paper sought to fill the gap in finance literature as a result of limited studies that have been conducted so far in this area using Namibian data. In view of the many opposing theories and conflicting empirical results in general on the relationship between capital structure and financial performance as well as the inherent limitations of this study, there is no conclusive evidence to suggest that the capital structure with emphasis on debt financing is negatively related to financial performance of firms listed on the NSX. The outcome of the study however, provides a reference point for future studies to be conducted to determine the relationship between capital structure and financial performance in Namibia and elsewhere. There is thus a need for further research on this topic.

Based on the objectives of the study the following hypotheses were formulated for testing:

- H_0 : The capital structure has a significant impact on financial performance.
- H_1 : There is a negative relationship between short term debt and financial performance.
- H_2 : There is a negative relationship between long term debt and financial performance.

In line with the first hypotheses (H_0) of the study, the findings revealed that long term debt has a significant impact on financial performance. This study however found that the impact of short-term debt on firm financial performance is insignificant and this finding is contrary to H_0 .

The study also found that both short debt term and long term debt are negatively related to all the selected profitability ratios suggesting that there is a negative association between debt financing and firm financial performance. The findings proof the validity of both H₁ and H₂.

Based on the objectives of the study and results presented above, the researcher therefore concludes that:

- The capital structure has an impact on the financial performance profitability of listed firms in Namibia;
- There is a negative relationship between debt financing and profitability of listed firms in Namibia;
- Short term debt can still be considered as a financing option because its impact on the financial performance of listed firms in Namibia is insignificant. The same can however not be said for long term debt

Despite the inherent limitations of the study, the overall outcome of the study, suggest that there is an adverse relationship between debt financing and the financial performance. It is of utmost importance to note that the impact of capital structure according to this study is only significant if long term debt financing is used.

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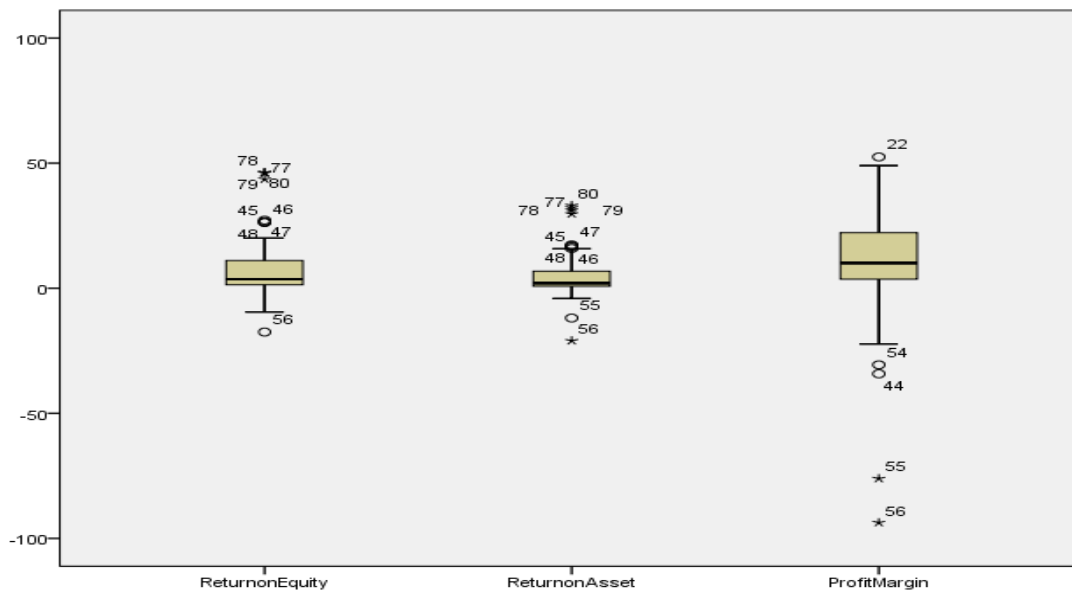
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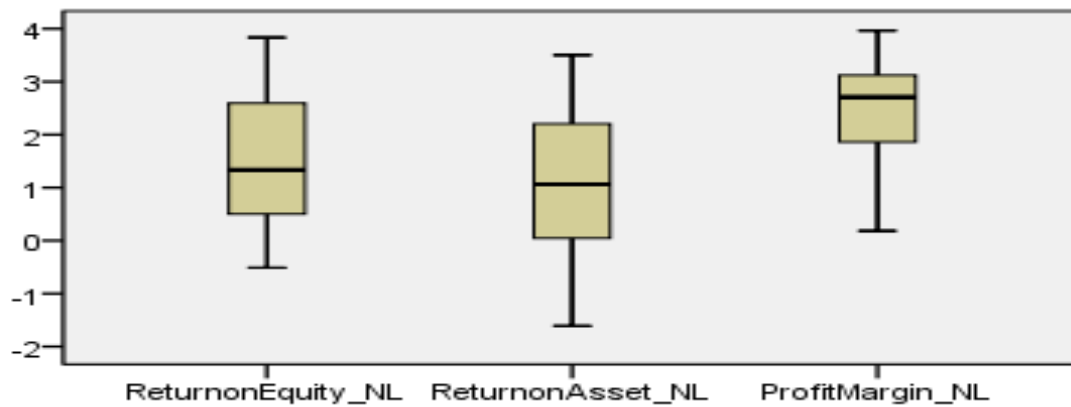
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APPENDIX 1

Before natural log transformation..more outliers



After log transformation..no outliers anymore



APPENDIX 2

Sampling Characteristics and Data transformation

APEPDIX-All the Models and their hausman test by Ys

1. Return on equity with all the Xs

1.1 Pooled OLS Regression

```
. regress returnequity_n1 shorttermd longtermd
```

Source	SS	df	MS			
Model	86.9879607	2	43.4939804	Number of obs =	84	
Residual	21.2439184	81	.262270598	F(2, 81) =	165.84	
Total	108.231879	83	1.30399854	Prob > F =	0.0000	
				R-squared =	0.8037	
				Adj R-squared =	0.7989	
				Root MSE =	.51212	

returneq~1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
shorttermd	-.0038227	.0050589	-0.76	0.452	-.0138883	.0062429
longtermd	-.0312784	.0023461	-13.33	0.000	-.0359464	-.0266103
_cons	3.214974	.1947193	16.51	0.000	2.827544	3.602405

1.2 Fixed Effect Model

```
. xtreg returnequity_n1 shorttermd longtermd, fe
```

```
Fixed-effects (within) regression      Number of obs   =      84
Group variable: id                    Number of groups =      21

R-sq:  within = 0.1128                  Obs per group:  min =      4
      between = 0.8082                    avg   =      4.0
      overall  = 0.7614                    max   =      4

corr(u_i, Xb) = 0.6251                  F(2, 61)       =      3.88
                                          Prob > F        =      0.0260
```

returneq~1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
shorttermd	.0102876	.0122558	0.84	0.405	-.0142195	.0347947
longtermd	-.0140564	.0094604	-1.49	0.142	-.0329736	.0048608
_cons	2.112122	.6280077	3.36	0.001	.8563433	3.367901
sigma_u	.6370998					
sigma_e	.31461085					
rho	.80395195	(fraction of variance due to u_i)				

```
F test that all u_i=0:      F(20, 61) =      7.68      Prob > F = 0.0000
```


2 Return on Asset with all the Xs

2.1 Pooled OLS Regression

```
. regress returnonasset_n1 shorttermd longtermd
```

Source	SS	df	MS			
Model	77.4888733	2	38.7444367	Number of obs =	84	
Residual	24.4058824	81	.30130719	F(2, 81) =	128.59	
Total	101.894756	83	1.22764766	Prob > F =	0.0000	
				R-squared =	0.7605	
				Adj R-squared =	0.7546	
				Root MSE =	.54891	

returnonas~1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
shorttermd	-.0065617	.0054223	-1.21	0.230	-.0173505	.004227
longtermd	-.0304388	.0025146	-12.10	0.000	-.0354421	-.0254354
_cons	2.803315	.2087079	13.43	0.000	2.388051	3.218578

2.2 Fixed Effect Model

```
. xtreg returnonasset_n1 shorttermd longtermd, fe
```

```
Fixed-effects (within) regression      Number of obs   =    84
Group variable: id                    Number of groups =    21

R-sq:  within = 0.0707                  Obs per group:  min =    4
      between = 0.7993                    avg   =    4.0
      overall  = 0.7269                    max   =    4

corr(u_i, Xb) = 0.5893                  F(2, 61)        =    2.32
                                          Prob > F         =    0.1067
```

returnonas~1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
shorttermd	.007314	.0150501	0.49	0.629	-.0227805	.0374085
longtermd	-.0149793	.0116173	-1.29	0.202	-.0382095	.0082509
_cons	1.793719	.771189	2.33	0.023	.2516317	3.335807
sigma_u	.59885952					
sigma_e	.38633992					
rho	.70612108	(fraction of variance due to u_i)				

```
F test that all u_i=0:      F(20, 61) =    5.13      Prob > F = 0.0000
```

2.3 Random Effect Model

. xtreg returnonasset_n1 shorttermd longtermd, re

```

Random-effects GLS regression           Number of obs   =    84
Group variable: id                     Number of groups =    21

R-sq:  within = 0.0637                  Obs per group:  min =    4
        between = 0.8360                  avg   =    4.0
        overall = 0.7600                  max   =    4

Random effects u_i ~ Gaussian          Wald chi2(2)    =   95.73
corr(u_i, X) = 0 (assumed)             Prob > chi2     =   0.0000

```

returnonas~1	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
shorttermd	-.0043032	.0078461	-0.55	0.583	-.0196813	.011075
longtermd	-.0289541	.0038966	-7.43	0.000	-.0365913	-.0213169
_cons	2.691346	.3162466	8.51	0.000	2.071514	3.311177
sigma_u	.41402689					
sigma_e	.38633992					
rho	.53455151	(fraction of variance due to u_i)				

2.4 Hous-man Specification Test

. hausman fixedasset .

	— Coefficients —		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) fixedasset	(B) randomasset		
shorttermd	.007314	-.0043032	.0116172	.012843
longtermd	-.0149793	-.0289541	.0139748	.0109443

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 1.64
Prob>chi2 = 0.4406

2.5 Pick RE model

3. Profit Margin with all the Xs

3.1 Pooled OLS Regression

```
. regress profitmargin_nl shorttermd longtermd
```

Source	SS	df	MS			
Model	14.0991099	2	7.04955495	Number of obs =	84	
Residual	40.9267865	81	.505268969	F(2, 81) =	13.95	
Total	55.0258964	83	.662962608	Prob > F =	0.0000	
				R-squared =	0.2562	
				Adj R-squared =	0.2379	
				Root MSE =	.71082	

profitmarg~1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
shorttermd	-.0318211	.0070217	-4.53	0.000	-.0457921	-.0178502
longtermd	-.0042783	.0032564	-1.31	0.193	-.0107574	.0022009
_cons	3.174929	.2702686	11.75	0.000	2.637179	3.712678

3.2 Fixed Effect Model

```
. xtreg profitmargin_nl shorttermd longtermd, fe
```

```
Fixed-effects (within) regression      Number of obs   =   84
Group variable: id                    Number of groups =   21

R-sq:  within = 0.1316                 Obs per group:  min =    4
      between = 0.0714                   avg   =   4.0
      overall  = 0.0349                   max   =    4

corr(u_i, Xb) = -0.9085                 F(2, 61)        =   4.62
                                           Prob > F         =   0.0135
```

profitmarg~1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
shorttermd	-.0187825	.0201481	-0.93	0.355	-.0590712	.0215061
longtermd	-.0437244	.0155525	-2.81	0.007	-.0748236	-.0126253
_cons	4.965629	1.032421	4.81	0.000	2.901176	7.030081
sigma_u	1.6231798					
sigma_e	.51720819					
rho	.9078276	(fraction of variance due to u_i)				

```
F test that all u_i=0:      F(20, 61) =   4.60      Prob > F = 0.0000
```

3.3 Random Effect Model

. xtreg profitmargin_n1 shorttermd longtermd, re

```

Random-effects GLS regression           Number of obs   =       84
Group variable: id                     Number of groups =       21

R-sq:  within = 0.0035                  Obs per group:  min =       4
        between = 0.4244                  avg =      4.0
        overall = 0.2508                  max =       4

Random effects u_i ~ Gaussian           wald chi2(2)    =       7.65
corr(u_i, X) = 0 (assumed)              Prob > chi2     =      0.0218

```

profitmarg~1	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
shorttermd	-.0260543	.010201	-2.55	0.011	-.0460479	-.0060608
longtermd	-.0050621	.0049746	-1.02	0.309	-.0148121	.0046879
_cons	3.121222	.4059839	7.69	0.000	2.325508	3.916936
sigma_u	.46458562					
sigma_e	.51720819					
rho	.44655514	(fraction of variance due to u_i)				

3.4 Hous-man Specification Test

. hausman FixedProfitM .

	Coefficients		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) FixedProfitM	(B) RandomProf~M		
shorttermd	-.0187825	-.0260543	.0072718	.0173749
longtermd	-.0437244	-.0050621	-.0386623	.0147355

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(2) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 14.77
Prob>chi2 = 0.0006

3.5 Pick FE Model