THE RELATIONSHIP BETWEEN LEVERAGE AND FINANCIAL PERFORMANCE OF TOP 100 SMALL AND MEDIUM ENTERPRISES IN KENYA

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DECLARATION

I hereby declare that this research project is my original work and has not been presented in any other university for an award.

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This research project has been submitted for examination with my approval as the university supervisor.

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DEDICATION

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ABSTRACT

Small and medium scale enterprises are considered important in both developed and developing countries. They produce goods and services which help to increase economic growth and contribute significantly to employment creation. Leverage reflects the extent of borrowed funds in the company's funding mix. Small and Medium Sized Enterprises (SMEs) are currently the largest employment creators and they contribute significantly to the country's Gross Domestic Product (GDP).The objective of the study is to determine the relationship between leverage and financial performance of top 100 SMEs in Kenya.

The study used descriptive cross sectional research design. The target population for this study was the top 100 SMEs (2013) in Kenya. The study used a sample of 30 SMEs randomly selected from the population of the study. The study collected secondary data which included the financial statements such as the profit and loss account. The study made use of SPSS (V.20.0) to aid in the analysis.

The study found that for the year 2009 liquidity had a greater effect to financial performance followed by leverage while firm size had a minimal impact on financial performance of SMEs. The study also found out that for 2012 leverage, liquidity and firm size explained 62.4% of changes in the financial performance of the SMEs. The study concluded that leverage had a significant influence on the financial performance; the study also concluded that there was a positive relationship between leverage (debt equity ratio) and financial performance of small and medium enterprises in Kenya. The study recommended that for SMEs to effectively determine the funding mix to employ and to maintain a good debt equity ratio, there is need for capacity building of SMEs in areas of business management. The study also recommended that banks should charge low interest rates to encourage SMEs to invest since high interest rates deter investors from using bank financing.

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LIST OF ABBREVIATIONS

ANOVA   Analysis of Variance

EBIT   Earnings Before Interest and Tax

GoK   Government of Kenya

GDP   Gross Domestic Product

NSE   Nairobi Securities Exchange

NPV   Net Present Value

OLS   Ordinary Least Squares

ROA   Return on Assets

ROE   Return on Equity

SME   Small Medium Enterprise

SPSS   Statistical Package for Social Science

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Small and medium scale enterprises are considered important in both developed and developing countries. They produce goods and services which help to increase economic growth and contribute significantly to employment creation. Although they play a crucial role in economic growth and employment their operations are often crippled by lack of adequate financing from financial institutions (Dube, 2013). However, without enough and sustainable financial capital SME will not realize full growth (SME-RC, 2012). Firms need capital in their operations. They can finance their operations using internal funds, debt and equity.

Debt finance is raised by borrowing from financial institutions. A lot of research has been carried out focusing on the impact of debt financing on performance of firms. The results from these studies are inconsistent (Dube, 2013). Cecchetti (2011) studied the effects of debt on firms and concluded that moderate debt level improves welfare and enhances growth but high levels can lead to a decline in growth of the firm. Rainhart and Rogoff (2009) argued that debt impacted positively to the growth of a firm only when it is within certain levels. When the ratio goes beyond certain levels financial crisis is very likely. The argument is also supported by Stern Stewart and Company which argues that a high level of debt increases the probability of a firm facing financial distress. Over borrowing can lead to bankruptcy and financial ruin (Ceccetti, 2011). High levels of debt will

constrain the firm from undertaking project that are likely to be profitable because of the inability to attract more debt from financial institutions.

Various capital structure researches have come to the conclusion that the combination of leverage related cost and tax advantage of the debt, results in an optimal capital structure. This optimal capital structure is below 100% debt since the tax advantage is traded against the probability of bankruptcy cost. Various empirical studies conducted indicate that the capital structure is related to the firm's characteristics. Such characteristics as firm size, profitability, growth rate, firm risk, and industry characteristics are recognized by many authors (Marsh, 1982; Bradley, 1984; Kester, 1986; Titman & Wessels, 1988). It is believed that each of the above characteristics play a different role in large firms and SMEs capital structure.

1.1.1 Leverage Change

According to Muthuraman and Deshpande (2012), gearing, leverage, or debt-equity ratio, reflects the extent of borrowed funds in the company's funding mix. This is computed as the ratio of the total debt that the company has taken, to its tangible net worth. Therefore, the debt equity ratio is simply the amount of debt you have on your balance sheet divided by the amount of equity. Hashemi (2013) also indicated that a firm's financial leverage is calculated by dividing total debt by total equity. A high debt/equity ratio means that a firm is aggressive in financing its growth with debt. He asserts that highly levered firms are more vulnerable to downturns in their business cycles, due to their legally binding payments.

Debt is an amount of money borrowed by one party from another. Many corporations/individuals use debt as a method for making large purchases that they could not afford under normal circumstances. A debt arrangement gives the borrowing party permission to borrow money under the condition that it is to be paid back at a later date, usually with interest. Debt financing is basically money that you borrow to run your business.

Damodaran (1999) holds that debt is a financing strategy designed to increase the rate of return on owners' investment by generating a greater return on borrowed funds than the cost of using the funds. The use of high levels of debt in the capital structure leads to an increase or decrease in the return on shareholders capital (ROE). Debt is always desirable if a firm achieves relatively high profits as it results in higher returns to shareholders (positive leverage). The use of debt is expected to enhance a firms' return on equity which is the ultimate measure of profitability.

1.1.2 Financial Performance

According to Chell and Baines (1998), financial performance of SMEs is the single most determinant factor of growth and ability to develop into fully defined shareholding firms. Financial performance is most often captured by use of measurement criteria such as increased turnover or wider profit margins. Sandberg, Vinbery and Pan (2002) defined the performance of small businesses as their ability to contribute to job and wealth creation through business start-up, survival and growth.

Performance measurement conducted by various scholars is done so by adopting proxies such as profitability, return on asset, liquidity, solvency, and sales growth and all these

can be extracted from the financial statements and/or reports. According to Levasseur (2002) information on financial performance is useful in predicting the capacity of the enterprise hence analyzing how well or poorly an enterprise is doing against its set objectives. The suitability of a measurement index is determined by the dominant characteristics that bring out the nature of the firm.

Irwin (2002) noted that many people find it difficult to look at a profit and loss account or a balance sheet and derive a full picture. As a result, ratios are often used to interpret accounts since they point out how an enterprise is performing and provide indications of trends and patterns. They can be compared to the same ratios in previous years' accounts and the accounts of other businesses operating in a similar environment. Ratios are published for many business sectors which can be used as a comparison. According to Slywotzky (1998), success in today's marketplace depends on how profit is really made in an industry. Profitability should be interpreted in terms of each individual company's circumstances.

1.1.3 Effect of Leverage on Financial Performance

Pecking order theory is totally consistent with SMEs behaviour in terms of composition of their capital structure. SMEs are more willing to use their internal fund rather than looking for external funds. As Myers (1984) explained, firms with the ability to generate acceptable amount of profit and earnings tend to use their own internal source of funds to finance their project. Therefore, it can be concluded that there is a negative relationship between the firm profitability and the level of leverage. This conclusion is compatible

with pecking order theory and other relevant studies like Cassar and Holmes (2003). However, some established theories believe that a positive relationship exists between profitability and leverage. For instance, Prasad, Ramamurth, and Naidu, (2001) argued that the market is not willing to finance companies with low level of profit. Tong and Green (2005) pointed out, that first of all there is a considerable negative relationship between profitability and gearing.

In an effort to validate MM theory in Kenya, Maina and Kondongo (2013) investigated the effect of debt-equity ratio performance of firms listed at the Nairobi Securities exchange. The study found a significant negative relationship between debt-equity ratio and all measures of performance. These results collaborates MM theory that, capital structure is relevant in determining the performance of a firm. The study further found that that firms listed at NSE used more short-term debts than long term. Javed and Akhtar (2012) explored the relationship between capital structure and financial performance. They concluded that there is a positive relationship between financial leverage, financial performance, and growth and size of the companies. The study, which focused on the Karachi Stock Exchange in Pakistan, used correlation and regression tests on financial data. The findings of the study are consistent with the agency theory. This study however isolated the other financing decisions and focused only on financial leverage.

Existence of a positive effect of leverage on firm profitability and growth in earnings is robust to also including short-term bank loans in the definition of leverage. Teruel and Solane (2008) analyzed the Spanish SMEs Corporate cash holdings and found that firms with a higher amount of short-term debt will hold higher levels of cash, because it might

lower the risks of the non-renewal the short-term debt. Weinraub and Visscher (1998) in their study on debt financing suggest that aggressive liquidity policy combine the higher levels of normally lower cost short-term debt and less long-term capital. Although capital costs are reduced, this increases the risk of a short-term liquidity problem. They established that total and short-term debt is positively related to firm's profitability, which might be the most important factor in accessing outside financing in countries with weak collateral laws. From their studies they also found out a negative relation between tangibility and short-term debt and a positive relationship between tangibility and long-term debt. These results are consistent with most theories on capital structure that suggest that firms without fixed-assets to use for collateral are unable to access long-term financing.

On the other hand, Pelham (2000) argued that long term debts provided small firms with more competitive advantages when compared with large firms. According to the results it was found out that there is a direct positive and significant relationship between long term loans and financial performance of the small businesses. He reported that long term debts was positively related to the growth/share, marketing/sales effectiveness, and gross profit in small and medium size manufacturing firms.

1.1.4 Small and Medium Enterprises in Kenya

The term SMEs covers a wide range of perceptions and measures, varying from country to country and between the sources reporting SME statistics. Some of the commonly used criterions are the number of employees, total net assets, sales and investment level. However, the most common definitional basis used is employment, but, there is a

variation in defining the upper and lower size limit of an SME (Ayyagari, Beck & Demirguc-Kunt, 2003). In Kenya is characterized by the employment of between 50 to 200 employees and capital assets of a substantial amount of about KES 2 million (excluding property). The size and credit demand of SMEs have outgrown the capacity of micro finance institutions, which offer small, short loans via group-lending methodologies, while the capacity of the SME risk profile combined with the lenders' lack of sophisticated risk assessment techniques makes many of them appear undesirable as credit customers for business banking (GoK, 2005).

In Kenya, Small and Medium Sized Enterprises (SMEs) are currently the largest employment creators and they contribute significantly to the country's Gross Domestic Product (GDP) (Government of Kenya, 2009), 2013). Due to their characteristics, SMEs in Kenya suffer from constraints that lower their resilience to risk and prevent them from growing and attaining economies of scale. The challenges are not only in the areas of financing investment and working capital, but also in access to financial resources which is constrained by both internal and external factors. Internally, most SMEs lack creditworthiness and management capacity, so they have trouble securing funds for their business activities such as procuring raw materials and products, and investing in plant and equipment. From the external perspective, SMEs are regarded as insecure and costly businesses to deal with because they lack required collateral and have the capacity to absorb only small amount of funds from financial institutions. So they are rationed out in their access to credit because of high intermediation costs, including the cost of monitoring and enforcement of loan contracts (Capital Markets Authority, 2010).

1.2 Research Problem

One important financial decision firms are confronted with is the debt policy or capital structure choice. This decision is particularly crucial given the effect it has on the value of the firm. The capital structure of a firm is a specific mix of debt and equity the firm uses to finance its operations (Abor, 2005). A firm can use different mixes of debts, equity or other financial arrangements. This interplay of debt and equity and corporate performance has been the subject of a number of studies. However, such empirical studies on the effect of capital structure on profitability have tended to concentrate on large firms (Majumdar & Chhibber, 1999; Abor, 2005).

The informal sector in Kenya, which constitutes 89.7% of total employment, created an additional 591,400 jobs in 2012 (Government of Kenya, 2009). Despite being recognized as the backbone of Kenya's economy, many Kenyan SMEs face significant challenges, key among then being access to finance. However, according to Capital Markets Authority (2010); Government of Kenya (2009); SMEs still experience various difficulties in improving their financial performance since short term loan, trade credit and long term loans are not well managed. This may be as a result of SMEs not using ideal debts in their day-to-day transactions and if this problem is not tackled it may continue to cause financial distress and business failure among SMEs. Moreover, the abundance of loan facilities plus the demanding approval requirement of the scarce available equity funds has led many of the SMEs to resort to debt. While debt is necessary for the free flow of cash in the operation of the SMEs, over proportion of debt in their financial structure may pose problem to their financial health and performance. Debt financing is important in enhancing a firm's growth. However debt financing causes

financial problem to a firm when the debt is not properly managed. Thus there in need to maintain a balance between debt and equity.

A review of the studies done globally, Abor (2005) examined the effect of capital structure on the corporate profitability of listed firms in Ghana using a panel regression model. His findings showed positive relationship between short term debt ratio and profitability while negative relationship between long term- debt ratio and profitability. The results of his study indicate positive association between total debt ratio and profitability. Ahmad, Abdullar and Roslan (2012) also did a study to investigate the impact of capital structure on firm performance in Malaysia; they analysed the relationship between return on assets (ROA), return on equity (ROE) and short-term debt and total debt. Adekunle and Sunday (2010) also conducted a study to examine the impact of capital structure on the performance of firms in Nigeria; they used debt ratio to proxy capital structure while the firms' performance was measured by return on asset and return on equity.

Locally, Mwangi, Makau and Kosimbei (2014) did study on the relationship between capital structure and performance of non-financial companies listed in the Nairobi Securities Exchange, Kenya Kaumbuthu, (2011) did a study on the relationship between capital structure and financial performance of firms listed under industrial and allied sector at the NSE. Luther (2012) also did a study on capital Structure and firm performance at Nairobi Stock Exchange (NSE). These previous studies have particularly concentrated on large firms listed in the NSE and none have looked at small firms. Moreover, despite the extensive literature on capital structure, the empirical analysis on

the relationship between debt equity ratio and financial performance of SMEs in Kenya is relatively scarce. It is from this background that this study sought to answer the question: What is the relationship between leverage and financial performance of SMEs in Kenya?

1.3 Objective of the Study

To determine the relationship between leverage and financial performance of top 100 SMEs in Kenya.

1.4 Value of the Study

This study was beneficial to different interest groups in a number of ways;

To start with, the study was expected to be of value to the management of SMEs to enable them manage their debt ratio. The management of these businesses would be sensitized on the most favourable debt/equity ratio to maintain in their business in a bid to improve their profitability.

The government and business support groups would also benefit as they would have a basis to create solutions to debt financing SMEs in Kenya, bearing in mind the fact that SMEs are important to the growth of any economy. Government agencies may use such financial information when collecting statistical information to reveal trends within the economy as a whole. This data would also guide potential entrepreneurs as they seek to start their own enterprises.

Lending institutions also stand to benefit from this research. SMEs are a potential source of business to lending institutions in Kenya, however, many of these lending institutions shy away from lending the SMEs due to the risks involved. This study would generate

new statistics and information on how SMEs maintain their debt/equity ratio thus guide them in making future decisions on lending to the SMEs.

The academia and researchers would also find the research useful in enhancing their knowledge about debt financing and debt equity ratio and hence improve their understanding of the research area better. It would also act as a basis for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature that helped inform the study as well as illuminate issues related to debt equity ratio. The literature review was divided into areas that deal with: the theoretical review in relation to debt equity ratio; the empirical review showing the various past works of authors in debt equity ratio and financial performance of firms.

2.2 Theoretical Review

The Modigliani Theory, Pecking Order Theory and the Agency theory have attempted to explain relationship between leverage and financial performance of top SMEs in Kenya.

2.2.1 The Modigliani Theory

A modern theory of business finance begins by the Modigliani & Miller (1958) capital structure irrelevance proposition. Before their work was published, there was no theory of capital structure that was generally accepted. The Modigliani & Miller (1958) analysis is based on the assumption that a probability distribution of the firm's cash flows does not depend on the capital structure decision it makes and that all investors share the same expectations regarding the cash flows. They also assume that there is a perfect capital market, where investors, who act rationally and are well informed, are free to buy and sell securities and can borrow funds at the same terms as companies do.

Under assumptions that there are no transaction costs and corporate taxes, Modigliani & Miller (1958) prove that the leverage of a firm has no effect on a market value of a firm.

When the firm chooses its debt-equity mix to finance its assets, all that it does is determine a division of cash flows between debt holders and equity holders. Explicitly Modigliani and Miller (1958, p. 268) state this as Proposition I: "The market value of any firm is independent of its capital structure and is given by capitalizing its expected return at the rate _k appropriate to its class". The underlying logic of this proposition, as Myers (2001) puts it, is that, in a perfect-market supermarket, the value of a pizza does not depend upon how it is sliced.

According to Frank and Goyal (2008), there are two fundamentally different types of the capital structure irrelevance proposition. The classic foundation of the Modigliani-Miller hypothesis is an arbitrage process, which enables investors to pursue homemade leverage by switching their investments from an unlevered firm to a levered firm or vice versa. By borrowing on a personal account at a risk-free rate and buying shares of the unlevered firm investors can create homemade leverage. The other way around, investors can undo undesirable leverage by buying fewer stocks of the levered firm and lending at a risk-free rate. As investors have this opportunity, they are not willing to pay a premium for levered firms over unlevered firms. Hence, the values of two companies, identical in all aspects except their capital structures, should be equal.

The second type of capital structure irrelevance is related to multiple equilibria (Frank & Goyal, 2008). Miller (1977) considers both personal and corporate taxes, which determine the equilibrium level of aggregate corporate debt and, hence, an equilibrium debt-equity ratio for a whole corporate sector. However, Miller's (1977) model does not specify how aggregate quantities are split up among individual firms. Although tax

considerations establish an economy-wide leverage ratio, there are multiple equilibria in which debt is issued by different firms (Frank & Goyal 2008). Miller (1977) concludes that it would be still true that the value of any firm, in equilibrium, would be independent of its capital structure.

In a subsequent paper, Modigliani & Miller (1963) relax one of their assumptions and recognize the importance of corporate taxes. Because interest expenses are tax deductible, they introduce an interest tax shield in their model. Due to the interest tax shield, the value of the levered firm increases or the cost of capital decreases. Every extra dollar of debt lowers tax payments. If debt is assumed to be risk-free and there are no offsetting costs associated with leverage, firms will try to shield as much taxable income as possible. Yet, in the real world there are no companies using exclusively debt financing. Hence, other factors, such as bankruptcy costs or agency costs, which increase in the present value of costs as the proportion of debt increases, were considered and led to the trade-off theory of capital structure.

2.2.2 The Pecking Order Theory

Myers (1984) and Myers and Majluf (1984) propose an alternative explanation of why firms choose certain capital structure, known as the pecking order theory. The pecking order theory is a preference order theory, which describes how firms choose to obtain new financing for their future activities and growth. The key underlying assumption of the pecking order model is asymmetric information between managers of a firm and external investors. The asymmetric information means that management, which is assumed to act in the interest of existing shareholders, knows the true value of the

existing assets and growth opportunities, while external investors are able only to guess these values.

Management's actions regarding financing are perceived as a signal about the true value of the firm. A decision to issue stock is perceived as a negative signal by prospective investors because they infer that management is willing to sell equity because the firm is overvalued. New shareholders are willing to invest only if the shares are sold at a marked-down price which increases the costs of attracting additional funds for the firm. As adverse selection costs make the new issuance of stock more expensive, management might decide not to issue new equity and not to undertake positive NPV projects. If the firm needs external financing and if the issue of debt is not possible, management considers issuing undervalued stock only if the NPV of the new investment exceeds the costs incurred due to undervaluation. Internal funds are always preferred over the external financing because such financing always allows avoiding problems of asymmetric information (Myers & Majluf, 1984).

Moreover, in the pecking order, a use of debt is preferred over a use of equity. Debt holders of the firm face less risk than shareholders because debt has a senior claim on the assets and earnings of the firm. The volatility of the future value of debt is lower than the volatility of the future value of equity, i.e., costs of asymmetric information of debt are lower than of equity. Hence, if internal sources are not available or sufficient and external financing is necessary, firms generally prefer to issue debt first, which is the safest security, and then hybrid securities such as convertible bonds or preferred equity. Equity is the last resort of external financing when debt capacity is exhausted (Myers 2001).

In contrast to the trade-off theory, in the pecking order theory, there is no optimal capital structure. Changes in the firm's debt ratio reflect only needs for external financing, not an objective to reach optimal capital structure. The pecking order theory explains a negative relationship between profitability and leverage: more profitable firms borrow less not because their target debt ratio is low, but because more profitable firms have more internal financing available (Myers, 2001). External financing is necessary for less profitable firms and, hence, they accumulate debt. As stated by Myers and Majluf (1984), the pecking order can be interpreted as managerial capitalism – managers' effort to avoid the discipline of capital markets and to cut the ties that bind managers' to shareholders' interests.

2.2.3 The Agency Theory

Jensen & Meckling (1976) argue that there are unavoidable agency costs in corporate finance, which arise due to two types of conflicts: conflict between firm's management and its shareholders and a conflict between shareholders and debt holders. In case of SMEs, managers often are also shareholders of a firm. Therefore, an issue of a conflict of interest between management and shareholders is not of much concern for SMEs. However, the agency conflict between equity holders and debt holders may be an acute problem for SMEs.

A potential benefit of debt is a restriction of managerial discretion, which is related to the free cash flow hypothesis developed by Jensen (1986). Free cash flow is a cash flow which exceeds the funds required to finance all positive NPV projects available to the firm. Then, as Jensen (1986, p. 323) states, the issue is "how to motivate managers to

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disgorge cash rather than investing it at below the cost of capital or wasting it on organization inefficiencies". When management has a large amount of cash available, it tends to spend it on increasing the size of the firm by using, for example, negative NPV projects, or on consumption of perks. A possible solution for this problem might be debt creation. Issuance of more debt and thereby increasing interest and principal payments reduce available free cash flows and, hence, reduce agency costs. Debt issuance effectively commits managers to pay out future cash flows. If the firm fails to make interest and principal payments, debt holders have a right to take the firm into a bankruptcy procedure. This threat acts as a motivating force to increase the efficiency of the firm. The problem of the free cash flow is more severe in companies which generate large cash flows, but have low growth opportunities. Hence, the control function of debt is more critical in such organizations.

Another potential problem that can trigger agency costs is a problem of risk shifting identified by Jensen and Meckling (1976). If management acts in the interest of shareholders (these two parties might be the same people in case of SMEs) and there is a possibility of default, managers may try to take actions to transfer value from the debt holders to shareholders. As only cash flows in non-bankrupt states matter, the firm might tend to undertake projects that are too risky and generate large payoffs in good states. If a project is successful and generates return higher than the face value of debt, equity investors will receive most of the gain. If the project fails, the debt holders will bear the consequences. To mitigate asset substitution problems, costly monitoring devices are included in debt contracts to protect debt investors.

Moreover, Myers (1977) emphasizes the underinvestment or debt overhang problem, which means that a firm can pass up some positive NPV projects. Not investing in such projects is to the detriment of debt holders because they are better off if the value of the firm increases. Under normal circumstances, the firm invests up to the point where the added present value of the project is equal to the required investment. However, a portion of this additional value goes to the existing debt holders of the firm, who are better protected. The benefit from investment for existing debt holders increases with the increasing risk of default. Thus, the increase of the market value of debt can be considered as a tax on new investment. If the tax is substantial, managers may try to reduce the size of the firm and pay out cash to shareholders. Myers (2001) also suggests that, if a company is already in a situation where creditors could force bankruptcy or reorganization, managers can 'play for time' by withholding problems. Such actions increase the effective maturity and the risk of debt. Again, debt holders suffer, while shareholders gain.

2.3 Determinants of Financial Performance of SMEs

2.3.1 Individual and Firm Characteristics

As Cragg and King (1988) and Rutherford and Oswald (2000) observe, previous research on determinants of small business performance fell into three categories: individual characteristics, firm characteristics, and environmental characteristics. Studies that fell under individual category have examined the relationship between individual characteristics and performance such as: age, education, managerial experience, industry experience, leadership practices, race, Chief Executive Officer personality, and gender

(Steiner & Solem, 1988; Ozcelik, 2008). On the characteristics of the firm, Studies that fell under this category have examined characteristics such as strategy/planning, structure, size, competitive orientation, top management team, culture, organizational growth, family control, operations management, and stage of development impact on firm's performance (Lerner & Almor, 2002; Megicks, 2007; Oswald, et al., 2009).

2.3.2 Financial Resources

On the other hand, Marris and Wood (1971) brings evidence that financial resources might also constrain firm performance. In fact, a wide range of financial characteristics can be introduced. They could include retained earnings, borrowing or new issues of stock. Rajan and Zingales (1998) find that industrial sectors with a great need for external finance grow substantially less in countries without well-developed financial markets. One important exception is Becchetti and Trovato (2002), who test both the effect of the firm's leverage ratio and the effect of financial constraints on financial performance. They conclude that although the effect of the leverage ratio is not significant, the qualitative dummy variable representing finance shortage appears to be an important restraint on performance.

2.3.3 Liquidity Constraints

Fagiolo and Luzzi (2006) in their investigation of the evolution of the distributions of size and performance, conditioned on liquidity constraints and/or age, they find that liquidity constraints do not seem to have a strong negative impact on firm performance in any given year. However, the methodology used clearly influences the conclusion: the negative impact of liquidity constraints on firm performance is strong in the pooled

sample, but tends to dissipate when the sample is disaggregated over time. Credit shortages constrain firm growth because of limited investment opportunities and, more generally, assuming that a lack of financial resources reduces the possibilities for long-term development and financial performance.

2.4 Empirical Review

Various studies have been conducted to seek and show the relationship between debt equity ratio and financial performance of firms. The studies have looked at both short term and long term debts. For instance locally, Mwangi et al. (2014) did a study to investigate the relationship between capital structure on the performance of non-financial companies listed in the Nairobi Securities Exchange (NSE), Kenya. The study employed an explanatory non-experimental research design. A census of 42 non-financial companies listed in 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 Generalised 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).

Hashemi (2013) did a study on the impact of capital structure determinants on small and medium size enterprise leverage. With the set of data gathered from 201 SMEs in Iran over the period of 2006 to 2010, the statistic panel data regression was used to analyze the empirical data. The result of this research reveals that the impacts of capital structure

determinants on SMEs leverage levels are different in terms of both magnitude and direction. The result indicates that profitability has a strong impact on SMEs borrowing decisions. Besides profitability, size and asset structure appear to have an impact on leverage level in compare with other determinants. He concluded that firms are more willing to finance their projects with short term debt, rather than long term debt. Long term debt is costly, and the probability of bankruptcy is higher with long term debt. Although long term debt is riskier for SMEs, but it shows the management confident in the firm's future since it obliges the firm's management to make legally binding future payments of interest. However, the empirical result of this study shows that all the determinants have an effect on the level of leverage in SMEs.

Soumadi and Hayajneh (2012) studied the relationship between capital structure and corporate performance on Jordanian shareholdings firms. The study used multiple regression models by least squares (OLS) to establish the link between capital structure and corporate performance of firms over a period of 5 years. The results showed that capital structure was associated negatively and statistically with the performance of the firms in the sample. Another finding from the study was that there was there was no significant difference to the impact of financial leverage between high financial leverage firms and low financial leverage firms in their performance. The study also concluded that the relationship between capital structure and firm performance was negative for both high growth firms and low growth firms.

Ahmad, Abdullar and Roslan (2012) carried a study in Malaysia which sought to investigate the impact of capital structure on firm performance by analysing the

relationship between return on assets (ROA), return on equity (ROE) and short-term debt and total debt. The study established that short-term debt and long-term debt had significant relationship with ROA. It was also established that ROE had significant relationship with short-term debt, long-term debt and total debt.

Yuan and Kazuyuki (2011) did a study on the impact of the debt ratio on firm investment. Using a sample of Chinese listed companies showed that total debt ratio had a negative impact on fixed investment. A firm with a high debt ratio will channel most of its income to debt repayments thereby forgoing investment using internal funds. As more debt is employed in the capital structure of a firm, the business risk also increases. Yuan and Kazuyuki argued that creditors will be reluctant to lend more funds to a highly indebted firm which can result in underinvestment. Firm operations will be affected if insufficient investment is undertaken.

Kaumbuthu (2011) carried out a study to determine the relationship between capital structure and return on equity for industrial and allied sectors in the Nairobi Securities Exchange during the period 2004 to 2008. Capital structure was proxied by debt equity ratio while performance focused on return on equity. The study applied regression analysis and found a negative relationship between debt equity ratio and ROE. The study focused on only one sector of the companies listed in Nairobi Securities Exchange and paid attention to only one aspect of financing decisions. The results of the study, therefore, may not be generalised to the other sectors. The present thesis covered all non-financial companies listed on the Nairobi Securities Exchange to determine the effects of financing decisions on firm financial performance.

In a study to examine the impact of capital structure on the performance of firms, Adekunle and Sunday (2010) used debt ratio to proxy capital structure while return on asset and return on equity were used as measures of firms' performance. The study used the Ordinary Least Squares method of estimation. The result of the study indicated that debt ratio has a significant negative impact on the firm's financial measures of performance. The study, however, did not consider other financing decisions in the analysis, including the mediating effect of internal cash flow available.

The study by Ebaid (2009) partially agreed with Ahmad et al (2012). In the study Ebaid wanted to establish the relationship between debt level and financial performance of companies listed on the Egyptian stock exchange. The study used return on assets, return on equity and gross profit margin as dependent variables and short-term debt, long-term debt and total debt as independent variables. The results from the study showed that there was a negative impact of short-term debt and total debt on return on assets (ROA). The study also concluded that there was no significant relationship between long-term debt financing and ROA. Ebaid also concluded that there was insignificant relationship between total debt, short-term debt and long-term debt and financial performance measured by gross profit margin and ROE. These results are inconsistent with other empirical studies such as Hadlock and James (2002) and Ghosh, Nag and Sirmans (2000), which revealed a positive relationship between financial leverage and choice of capital structure. Other studies revealed a negative relationship such as Berger and Bonaccorsi di Patti (2006), Gleason Mathur and Mathur (2000); and Simerly and Li (2000) whereby lower equity capital ratio is associated with higher firm performance. The contradicting results give room for introducing additional variables in new studies.

2.5 Summary of the Literature Review

Several studies have been conducted on debt financing that indicate either positive or negative relationship on profitability of the firm. While some studies show positive relationship between short term debt ratio and profitability others show negative relationship between long term- debt ratio and profitability.

A review of the studies also shows that despite the extensive literature on capital structure there are very few studies done on the relationship between debt equity ratio and financial performance of SMEs. Moreover, majority of the studies done have been conducted either in developed countries or in developing countries but the empirical analysis in Kenya is relatively scarce.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed the methodology adopted by the researcher in carrying out the study. The chapter also presented the population studied, the methods used to sample it, the instruments used in data collection and procedures that were used in data analysis.

3.2. Research Design

Descriptive cross sectional research design was adopted for this study. According to Cooper and Schindler (2003), a descriptive study is concerned with finding out the what, where and how of a phenomenon. Descriptive research design was chosen because it enables the researcher to generalise the findings to a larger population. Descriptive design method provided quantitative data from cross section of the chosen population. The descriptive research collects data in order to answer questions concerning the current status of the subject under study (Mugenda and Mugenda, 2003).

3.3 Population of the Study

A population is defined as the total collection of elements about which we wish to make some inferences (Cooper and Schindler, 2003). The target population for this study was the top 100 SMEs (2013) in Kenya. The KPMG top 100 SMEs were targeted since data will be available as they issue out their financial statements to KPMG for auditing before

being selected among the top SMEs in Kenya, thus they maintain proper books of account.

3.4 Sample

Random sampling was adopted so as to give each item in the population an equal probability of being selected. The sample was selected from the population target of 100 possible respondents by taking a 30% sample of the target population. Hence the sample size of the study was 30 SMEs which were chosen randomly and the respondents were the senior managers in sampled SMEs.

3.5 Data Collection

The study collected secondary data. The secondary data collected included the financial statements such as the profit and loss account and the balance sheets of the targeted SMEs. The data collected included total assets, Equity, Retained earnings, Total liabilities, net profit, etc. The figures obtained were used to compute return on assets, long term debt, short term debt, and equity. The data covered a period of 5 years from 2009-2013.

3.6 Data Analysis

The whole process which starts immediately after data collection and ends at the point of interpretation and processing data is data analysis (Cooper & Schindler, 2003). Therefore, editing, coding, classifying and tabulating will be the processing steps used to process the collected data for a better and efficient analysis. The collected data was entered in the Statistical Package for Social Sciences (SPSS) software version 20 to aid in the analysis.

Before the analysis, the variables were tested for their stationarity. Thus the time series properties of the variables were explored to determine the order of integration of each variable included in the model. A popular unit root test which is Augmented Dickey-Fuller (ADF) was used to examine the stationarity status of the variables. The essence of this test was to avoid spurious regression problem normally associated with time series econometric modelling (Granger & Newbold, 1974). Based on the estimates of unit root test, a Multivariate Time Series linear Regression Model was adopted according to best suited specification.

The data was also tested for multicollinearity. The existence of multicollinearity is a vital problem in applying Multiple Time Series Regression Model. Multicollinearity is a situation when independent variables in the regression model are highly inter-correlated. To check for multicollinearity, the study will obtain a correlation matrix between all independent variables. The test for multicollinearity is significant for the fact that, it gives abnormal R-Squared value along with spurious regression coefficient value with large standard error estimates. This test could be first step in detecting a solution for improving the regression model for variables which are highly correlated.

For regression model to be used, it is assumed that the residuals are uncorrelated with one another. If the errors are correlated with one another, it can be stated that they are serially correlated and this can be an indication that the coefficients estimates derived using OLS regression model are still unbiased, but they are inefficient. The presence of serial correlation in the regression model will be examined by Durbin Waston (DW) Test.

Data was analyzed through both descriptive and inferential statistics. Descriptive analysis included frequencies and percentages while in inferential statistics employed a regression model. The analyzed data was presented in frequency distributions tables and pie charts for ease of understanding and analysis.

3.6.1 Analytical Model

The regression model was used to establish the form of relationship between the dependent and the independent variable. The regression equation took the following form;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where:

Y = Financial performance

X_1 = Leverage

X_2 = Firm Size

X_3 = Liquidity

β_0 = the constant

ϵ = error term

β_1- β_3 are the regression coefficients or change induced by leverage, firm size and liquidity on financial performance. It determines how much each (leverage, firm size and liquidity) contribute to Financial Performance.

The dependent variable is the financial performance which was regressed against the independent variables (Leverage, Firm Size and Liquidity). Financial performance was measured by return on Assets (R.O.A).

Table 3.1 Operationalization of Research Variables

Dependent Variable	Indicators	Ratio
Financial Performance	• Return on Assets	• Net income divided by average total assets
Independent Variable		
Leverage	• Long term debt • Short term debt • Equity	Debt-to-Equity Ratio = Total Debt/Total Equity
Liquidity	• Cash • Cash equivalents • Receivables • Inventory	Current assets/ Current liabilities
Firm Size	• Total Assets	Measured as log of total assets in Kshs.

The significance of the variables in the regression model was measured or determined by the p value; whereby, if the p value of the variable is 0.05 (5%) and below, then the variable were deemed significant while where the p value co-efficient of the variable is above 0.05, then the relationship of the variables were deemed to be insignificant. The beta explained whether the relationship between the dependent and the independent variable is high or low, positive or negative; this was revealed by the value of the beta co-efficient.

To establish the strength of the relationship between the independent and dependent variable, the study conducted The Pearson product-moment correlation coefficient. The strength of linear association between two variables is denoted by r. It attempts to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient, r, indicates how far away all these data points are to this line of best fit.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter presents the findings of the study based on the data collected from the field. The study sought to establish the relationship between leverage and financial performance of top 100 SMEs in Kenya. The study will collected secondary data from the targeted SMEs which included the financial statements such as the profit and loss account and the balance sheets. The data obtained was used to compute return on assets, long term debt, short term debt, and equity. The data will cover a period of 5 years from 2009-2013.

4.2 Descriptive Analysis

Table 4.1: Descriptive Analysis

	Min	Max	Median	Mean	S.D
Financial performance	0.1376	0.5187	0.2781	0.4533	0.2115
Leverage	0.3630	0.4360	0.2460	0.1983	0.1636
Liquidity	27.261	35.4426	31.206	31.3006	2.6223
Firm size	17.664	24.9729	20.497	20.7021	1.5230

Source: (Field Data, 2014)

From the findings in table 4.1, financial performance measured registered a minimum of 0.1376 with a maximum of 0.5187 (the median was 0.2781 with a mean of 0.4533 and a standard deviation of 0.2115. For Leverage, the minimum was 0.3630 with a maximum of 0.4360, median of 0.2460, mean of 0.1983 with a standard deviation of 0.1636. Liquidity posted a minimum of 27.261, maximum of 35.4426, median of 31.206, mean of 31.3006 with a standard deviation of 2.6223. Firm size recorded a minimum of 17.664

maximum of 24.9729, median of 20.497; mean of 20.7021with a standard deviation of 1.5230.

4.3 Correlation Analysis

In order to establish the the relationship between leverage and financial performance of top 100 SMEs in Kenya, Pearson product moment correlation analysis was used. Correlation is a number between -1 and +1 that measures the degree of association between two variables. The correlation coefficient value (r) ranging from 0.10 to 0.29 is considered to be weak, from 0.30 to 0.49 is considered medium and from 0.50 to 1.0 is considered strong. A positive value for the correlation implies a positive. A negative value for the correlation implies a negative or inverse association. The data presented on Leverage, Liquidity and Firm size were computed into single variables per factor by obtaining the averages of each factor. Pearson's correlations analysis was then conducted at 95% confidence interval. Table 4.3 below indicates the correlation matrix between the factors (Leverage, Liquidity and Firm size) and Financial Performance.

According to the correlation matrix, there was a positive and significant relationship between Financial Performance and Leverage, Liquidity and Firm size of magnitude 0.743, 0.697 and 0.701 respectively. The positive relationship indicates that there was a correlation between the factors and Financial Performance. According to the correlation matrix, there is a positive and significant relationship between Financial Performance and Leverage, Liquidity and Firm size of P-value of 0.016, 0.004 and 0.048 respectively at 95% level of confidence. The positive relationship indicates that there was a correlation between the factors and Financial Performance. The correlation findings infers that all the

factors positively and significantly influenced Financial Performance of top 100 SMEs in Kenya with Leverage having the highest effect on Financial Performance, followed by Firm size while Liquidity had the lowest effect on Financial Performance of 100 SMEs in Kenya. This notwithstanding, all the factors were significant (p-value <0.05) at 95% confidence level with the most significant factor being Leverage.

Table 4.2: Correlation Analysis

		Financial performance	Leverage	Liquidity	Firm size
Financial performance	Pearson Correlation	1			
	Sig. (2-tailed)				
Leverage	Pearson Correlation	.743	1		
	Sig. (2-tailed)	.004			
Liquidity	Pearson Correlation	.697	.594	1	
	Sig. (2-tailed)	.014	.019		
Firm size	Pearson Correlation	.701	.604	.813	1
	Sig. (2-tailed)	.048	.039	.035	

4.4 Regression Analysis

A multivariate regression model was applied to determine the form of relationship between the financial performance of SMEs in Kenya and leverage, liquidity, firm size. The study applied the statistical package Version 20.0 to code, enter and compute the measurements of the multiple regressions for the study. These findings are discussed and presented below:

4.4.1 Year 2009 Analysis and Interpretations

Table 4.3: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.778	0.605	0.554	0.31207

Predictors: (Constant), leverage, liquidity, firm size

The adjusted R^2 is the coefficient of determination which tells us how the financial performance of the SMEs varied with leverage, liquidity, firm size. The regression model summary above shows adjusted R^2 value of 0.554. This implies that leverage, liquidity and firm size explain or accounts 55.4% of variations or changes in financial performance of SMEs; the remaining 44.6% would be explained by other variables not included in the study.

Table 4.4: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	9.785	3	3.261	9.851	.014
Residual	8.276	26	0.331		
Total	18.061	29			

The F critical at 5% level of significance is 2.307 while the F calculated is 9.851. Since F calculated is greater than the F critical (value = 2.307), this shows that the overall model was significant in explaining the relationship between financial performance of SMEs and the three independent variables. The significance value is also less than 0.05, thus indicating that the predictor variables, (Leverage, Liquidity and Firm size) explain the variation in the dependent variable.

Table 4. 5: Coefficients Results

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.821	0.604		4.673	0.000
Leverage	0.157	0.110	0.191	1.424	0.015
Liquidity	0.332	0.067	0.717	4.946	0.000
Firm size	0.084	0.072	0.155	1.162	0.065

Dependent Variable: Financial performance

The study shows that there was a positive association between financial performance of top 100 SMEs and the entire three variables as shown: leverage (r= 0.157), liquidity (r=0.332), firm size (r=0.084). The results show that holding all the variables constant, financial performance would have an autonomous value of 2.821. A unit increase in leverage would lead to a unit increase in financial performance by 0.157 while a unit increase in liquidity and firm size will lead to a unit a unit increase in financial performance by 0.332 and 0.084 respectively. The findings also showed that all the variables were significant as their significance values were less than 0.05. This inferred that liquidity had a greater effect to financial performance followed by leverage while firm size had a minimal impact on financial performance of SMEs. The regression model drawn from table 4.5 above was presented as shown below:

$Y = 2.821 + 0.157\, X_1 + 0.332\, X_2 + 0.084\, X_3 + \epsilon$

Where Y= financial performance of SMEs.

X_1= Leverage, X_2= Liquidity, X_3= Firm size

4.4.2 Year 2010 Analysis and Interpretations

Table 4. 6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.897	0.805	0.681	4.223

a Predictors: (Constant), leverage, liquidity, firm size

The value of adjusted R^2 is 0.681. This implies that, there was a variation of 68.1% between financial performance of SMEs (dependent variable) and leverage, liquidity, firm size (independent variables). This is to mean that the regression line accounts for 68.1% of the total observations.

Table 4.7: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	8.169	3	2.723	6.216	.002
	Residual	11.393	26	0.438		
	Total	19.562	29			

From the findings in the ANOVA table above, the study found out that F critical at 5% level of significance is 2.307 while the F calculated is 6.216. Since F calculated is greater than the F critical (value = 2.307), this shows that the overall model was significant in explaining the relationship between financial performance of SMEs and the three independent variables. The significance value (= 0.02) is also less than 0.05, thus indicating that the predictor variables, (Leverage, Liquidity and Firm size) explain the variation in the dependent variable which is the financial performance.

Table 4.8: Coefficient

Model		Un standardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	Constant	5.833	3.156		1.839	0.000
	Leverage	2.771	0.061	0.097	0.097	0.038
	Liquidity	0.216	0.018	0.094	0.094	0.023
	Firm size	0.270	0.054	0.481	5.031	0.104

Dependent Variable: Financial performance

The results show that there was a positive relationship between financial performance of SMEs and the three variables. From the above regression model, holding leverage, liquidity and firm size constant, financial performance of SMEs would have an autonomous value of 5.833. The study further establishes that a unit increase in leverage would cause an increase in financial performance by a factor of 2.771, a unit increase in liquidity would cause an increase in financial performance by a factor of 0.216, a unit increase in firm size would cause an increase in financial performance of SMEs by a unit of 0.270. The study further shows that there is a significant relationship between financial performance of SMEs and two of the variables as shown by the p values; leverage ($p=0.038<0.05$), liquidity ($p=0.023<0.05$). However, the study established an insignificant relationship between financial performance and the size of the SMEs as shown by $0.104>0.05$. This inferred that leverage had a greater effect to financial performance followed by firm size while Liquidity had a minimal impact on financial performance of SMEs. The regression model drawn from table 4.8 above was presented as shown below:

$Y = 5.833 + 2.771X_1 + 0.216X_2 + 0.270X_3 + \epsilon$

4.4.2 Year 2011 Analysis and Interpretations

Table 4.9: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.798	0.637	0.572	3.441

Predictors: (Constant), leverage, liquidity, firm size

Table 4.9 above shows that the value of adjusted R^2 is 0.572. This implies that, leverage, liquidity, firm size explained of 57.2 % of financial performance of SMEs in the year 2011 at a confidence level of 95%. The remaining 42.8% can be explained by other variable or factors not included in the study. This shows that the model summary was fit for the study.

Table 4.10: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	13.430	3	4.476	4.852	.013
	Residual	23.987	26	0.922		
	Total	37.417	29			

From the findings in the ANOVA, the study found out that F critical at 5% level of significance is 2.307 while the F calculated is 4.852. Since F calculated is greater than the F critical (value = 2.307), this shows that the overall model was significant in explaining the relationship between financial performance of SMEs and the three independent variables in the year 2011. The significance value (= 0.013) is also less than 0.05, thus indicating that the predictor variables, (Leverage, Liquidity and Firm size) explain the variation in the dependent variable which is the financial performance and that the overall model was significant and does give a logical support for the study.

Table 4.11: Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.441	3.156		1.839	0.000
	Leverage	0.386	0.067	0.095	0.095	0.048
	Liquidity	0.142	0.051	0.091	0.091	0.005
	Firm size	0.215	0.411	0.094	0.094	0.913

Dependent Variable: Financial performance

From the findings above, the study found out that holding all the independent variables constant, financial performance of SMEs would have an autonomous value of 3.441. A unit increase in leverage would cause an increase in financial performance of the SMEs by a factor of 0.386; a unit increase in liquidity would cause an increase in financial performance by a factor of 0.142 while a unit increase in the firm size would cause an increase in financial performance by a unit of 0.215. The results further show that there is a significant relationship between financial performance of the sampled SMEs and two of the predictor variables as shown: leverage ($p=0.048<0.05$), Liquidity ($p=0.005<0.05$). However the relationship between the SME size and financial performances was found to be insignificant ($p=0.913<0.05$). This inferred that leverage had a greater effect on financial performance of SMEs followed by firm size while liquidity had a minimal effect on financial performance of SMEs. The regression model drawn from table 4.11 above was presented as shown below:

$Y = 3.441 + 0.386 X_1 + 0.142 X_2 + 0.215 X_3 + \epsilon$

4.4.3 Year 2012 Analysis and Interpretations

Table 4.12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.856	0.733	0.624	4.605

Predictors: (Constant), leverage, liquidity, firm size

Table 4.12 above showed that the coefficient of determination value of 0.624 which indicates that the regression line accounts for 62.4% of the total observations. This is to mean that leverage, liquidity and firm size explained 62.4% of changes in the financial performance of the SMEs. This therefore means that other factors not studied in this research contribute 37.6% of variance in the dependent variable. Therefore, further research should be conducted to investigate the other factors affecting the financial performance of SMEs.

Table 4.13: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	9.156	3	3.052	5.363	.047
	Residual	14.805	26	0.569		
	Total	23.961	29			

Table 4.13 above depicts the ANOVA findings; From the findings, the study found out that F critical at 5% level of significance is 2.307 while the F calculated is 5.363. Since F calculated was greater than the F critical (value = 2.307), this shows that the overall model was significant in explaining the relationship between financial performance of SMEs and the three independent variables in the year 2012. The significance value (= 0.047) is also less than 0.05, thus indicating that the predictor variables, (Leverage,

Liquidity and Firm size) explains that the overall model was significant and does give a logical support for the study.

Table 4.14: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	Constant	3.918	1.715		3.133	0.002
	Leverage	0.579	0.057	0.095	0.093	0.026
	Liquidity	0.200	0.063	0.091	0.094	0.035
	Firm size	0.355	0.610	0.094	0.092	0.018

Dependent Variable: Financial performance

The study established that holding all independent variables constant, financial performance of the SMEs had an autonomous value of 3.918. A unit increase in leverage would cause an increase in financial performance by a unit of 0.579; a unit increase in liquidity would cause a unit increase in financial performance by a factor of 0.200 while a unit increase in firm size would cause an increase in financial performance by a factor of 0.355. The study further established that there was a significant relationship between financial performance of the SMEs and all the three of the variables as shown: leverage ($p=0.026<0.05$), liquidity ($p=0.035<0.05$), firm size ($p= 0.018<0.05$). The regression model drawn from table 4.14 above was presented as shown below:

$$Y= 3.918 + 0.579\ X_1 + 0.200X_2 + 0.355X_3 + \epsilon$$

4.4.4 Year 2013 Analysis and Interpretations

Table 4.15: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.775(a)	0.600	0.535	0.40301

Predictors: (Constant), leverage, liquidity, firm size

The regression model summary above shows that the value of adjusted R^2 value of 0.535. This implies that leverage, liquidity, firm size explained 53.5% of financial performance of SMEs. This implies that the remaining 46.5% would be explained by other variables not included in the study. This also shows that the study model was fit for the study.

Table 4.16: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	11.934	3	3.978	4.804	.032
	Residual	21.535	26	0.828		
	Total	33.469	29			

Table 4.16 above depicts the ANOVA findings for the year 2013. From the findings, the study found out that the value of F critical at 5% level of significance is 2.307 while the F calculated is 4.804. Since F calculated was greater than the F critical (value = 2.307), this shows that the overall model was significant in explaining the relationship between financial performance of SMEs and the three independent variables in the year 2013. The significance value (= 0.032) is also less than 0.05, thus indicating that the predictor variables, (Leverage, Liquidity and Firm size) explains that the overall model was significant and does give a logical support for the study.

Table 4.17: Coefficients

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	1.182	1.367		0.871	0.000
Leverage	0.203	0.176	0.109	0.675	0.000
Liquidity	0.169	0.182	0.023	0.145	0.014
Firm size	0.239	0.273	0.246	1.461	0.206

Dependent Variable: financial performance

The study established that holding all independent variables constant, financial performance of the SMEs had an autonomous value of 1.182. Holding all the other independent variables constant at zero, a unit increase in leverage would cause an increase in financial performance by a unit of 0.203; a unit increase in liquidity would cause a unit increase in financial performance by a factor of 0.169 while a unit increase in firm size would cause an increase in financial performance by 0.239. The study shows that there was a positive association between financial performance of SMEs and all the three variables as shown: leverage (r= 0.203), Liquidity (r=0.169), Firm size (r=0.239). The study further established that at there was a significant relationship between financial performance of SMEs and leverage (p=0.000<0.05), liquidity (p=0.014<0.05). However, the study established an insignificant relationship between financial performance and the size of the SMEs (p=0.206>0.05). The regression model drawn from table 4.17 above was presented as shown below:

$Y = 1.182 + 0.203X_1 + 0.169X_2 + 0.239X_3 + \epsilon$

4.5 Summary and Interpretation of Findings

The study found that the regression equations for the period 2009 to 2013 related Financial Performance of the SMEs to their leverage, liquidity, firm size. From the 2009 model, taking all factors (leverage, liquidity and firm size) constant at zero, financial performance would have an autonomous value of 2.821. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in leverage would lead to a unit increase in financial performance by 0.157 while a unit increase in liquidity and firm size will lead to a unit a unit increase in financial performance by 0.332 and 0.084 respectively.

The 2010 model shows that taking all factors (leverage, liquidity and firm size) constant at zero, financial performance would have an autonomous value of 5.833. The data findings analyzed also shows that taking all other independent variables at zero, a unit increase in leverage would cause an increase in financial performance by a factor of 2.771, a unit increase in liquidity would cause an increase in financial performance by a factor of 0.216, a unit increase in firm size would cause an increase in financial performance of SMEs by a unit of 0.270.

The 2011 model shows that taking all factors (leverage, liquidity and firm size) constant at zero, financial performance would have an autonomous value of 0.386; the data findings analyzed also shows that taking all other independent variables constant at zero, a unit increase in liquidity would cause an increase in financial performance by a factor of 0.142 while a unit increase in the firm size would cause an increase in financial performance by a unit of 0.215.

From the 2012 model the study found out that taking all factors (leverage, liquidity and firm size) constant at zero, financial performance would have an autonomous value of 3.918. The data findings analyzed also shows that taking all other independent variables constant at zero, unit increase in leverage would cause an increase in financial performance by a unit of 0.579; a unit increase in liquidity would cause a unit increase in financial performance by a factor of 0.200 while a unit increase in firm size would cause an increase in financial performance by a factor of 0.355. The study further established that there was a significant relationship between financial performance of the SMEs and all the three of the variables and all the variables were positively correlated with the financial performance of SMEs

The 2013 model shows that taking all factors (leverage, liquidity and firm size) constant at zero, financial performance would have an autonomous value of 0.203. The data findings analyzed also shows that taking all other independent variables constant at zero, a unit increase in liquidity would cause a unit increase in financial performance by a factor of 0.169 while a unit increase in firm size would cause an increase in financial performance by 0.239. The study shows that there was a positive association between financial performance of SMEs and all the three variables. The study further established that at there was a significant relationship between financial performance of SMEs and leverage and liquidity since their significance values were less than 0.05. However, the study established an insignificant relationship between financial performance and the size of the SMEs since its significance value was greater than 0.05.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presented the summary of key data findings, conclusion drawn from the findings and recommendation made there-to. The conclusions and recommendations drawn were focused on establishing the relationship between leverage and financial performance of top 100 SMEs in Kenya.

5.2 Summary of Findings and Discussion

Small and medium scale enterprises are considered important in both developed and developing countries. They produce goods and services which help to increase economic growth and contribute significantly to employment creation. Leverage reflects the extent of borrowed funds in the company's funding mix. This is computed as the ratio of the total debt that the company has taken, to its tangible net worth. Financial performance of SMEs is the single most determinant factor of growth and ability to develop into fully defined shareholding firms. Financial performance is most often captured by use of measurement criteria such as increased turnover or wider profit margins. The purpose of the study was to determine the relationship between leverage and financial performance of top 100 SMEs in Kenya. This study adopted descriptive cross sectional research design. The population of interest in this study comprised of the 30 small and medium scale enterprises in Kenya. The data was analysed through both descriptive and inferential statistics. Analysis was done with the help of Statistical package for social sciences (SPSS version 20.0).

In order to test the relationship between the variables the inferential tests including the regression analysis was used. Regression analysis was therefore used to determine the relationship between variables in the study. From the regression model, the study found out that there leverage, liquidity and firm size positively influenced the financial performance of SMEs. The study found out that the intercept was 4.194 for all years. The three independent variables that were studied (leverage, liquidity and firm size) explain a substantial 70.3% of variation in the financial performance of SMEs as represented by adjusted R^2 (0.705). The study established that the coefficient for leverage was 0.261, meaning that leverage was positively and significantly influenced the financial performance of SMEs. The study also established that the coefficient for liquidity was 0.159 while the coefficient for firm size was 0.613 meaning that firm size positively and significantly influences the financial performance of SMEs. The study therefore concludes that there was a relationship between leverage and financial performance of top 100 SMEs in Kenya.

5.3 Conclusions

This paper examines the relationship between leverage and financial performance of SMEs in Kenya. The study concludes that leverage, firm size and liquidity influences the financial performance of SMEs in Kenya. The study concludes that leverage has a significant influence on the financial performance. This result contradicts the work done by Becchetti and Trovato (2002), who tested both the effect of the firm's leverage ratio and the effect of financial constraints on financial performance. They conclude that although the effect of the leverage ratio is not significant, the qualitative dummy variable representing finance shortage appears to be an important restraint on performance.

The Study also deduced that firm size influenced the financial performance of SMEs.This is consistent with work by Marsh (1982), Bradley (1984) and Wessels (1988) who indicated that firm size, profitability, growth rate, firm risk, and industry's characteristics play a different role in large firms and SMEs capital structure. The study established that 70.3% of variation in the financial performance of SMEs is explained by the independent variables. The study therefore concludes that the model used for this study was logical.

The study concludes that liquidity also influenced the financial performance of SMEs. This result is consistent with work done by Fagiolo and Luzzi (2006) who indicated that liquidity constraints do not seem to have a strong negative impact on firm performance in any given year. However, Fagiolo and Luzzi (2006) indicated that the methodology used clearly influences the conclusion: the negative impact of liquidity constraints on firm performance is strong in the pooled sample, but tends to dissipate when the sample is disaggregated over time. The study concludes that there is a positive relationship between leverage (debt equity ratio) and financial performance of small and medium enterprises in Kenya. This means that SMEs that maintain a good debt equity ratio registers high return on assets while levered firms are more vulnerable which may lead to a decrease in the return on assets. This also implies that increased long term and short term loans reduce the financial performance of the SMEs. The study also concludes that high liquidity significantly contributes to increased financial performance of the SMEs. However, firm size has a conflicting influence on financial performance which implies that firm size may not solely determine financial performance of a firm; there must be other factors in play.

5.4 Limitations of the study

Improved survey measures of financial performance of small and medium enterprises and various potential financial performance determinants such as inflation, religion, marginal tax rates, market completion and culture could improve the reliability of the empirical results and further reduce the risk of measurement error. This study was unable to include those variables at the same time. The types of approaches used in measuring leverage, liquidity, firm size and financial performance by using a survey instrument might provide limited results, and different research designs such as interviews or an experiment could also produce different results.

The researcher encountered various limitations that were likely to hinder aces to information sought by the study. The researcher encountered problems of time as the research was being undertaken in a short period with limited time for doing a wider research.

Another major limitation of the study was that the model did not capture all the major variables that have been hypothesized by other researchers as determining financial performance of small and medium size enterprises. The study considered only four of these variables while other researchers have used even more than 5 variables in the past. Thus no conclusion could be arrived at concerning which variable was the most important in predicting leverage.

Additionally, the study only examined data for five years between 2009-2013. This period could potentially be too short and therefore capable of yielding biased results as suggested by Tugba (2009).

Finally, the annual data are prepared under the underlying assumptions and concepts. These assumptions are subjective thus non – standardization of their applicability especially in terms of provisions and estimates. This therefore does not give accurate results in terms of financial performance of the selected SMEs

5.5 Recommendations

5.5.1 Policy Recommendations

The study recommends that for SMEs to effectively determine the funding mix to employ and to maintain a good debt equity ratio, there is need for capacity building of SMEs in areas of business management (including financial record keeping). Thus the government and other stakeholders need to promote these SMEs through training and skill acquisition that will enable them manage their debts effectively, utilize their loans efficiently thereby reducing the probability of their being credit rationed and thus improving their performance.

SMEs should use moderate debt levels in their capital structure. High levels of interest payments reduce the availability of internal funds for investment. It is therefore recommended that banks should charge low interest rates to encourage SMEs to invest. High interest rates deter investors from using bank financing. Banks are also recommended to give long-term loans to enable firms to invest in equipment and machinery. It is difficult to make loan repayments of short-term debt financing that was used for long -term investments. Ideally the primary source of loan repayment should be cash flows from the project.

5.5.2 Suggestion for Further Research

Further research should be done to incorporate other variables left out like growth, risk, among others to determine whether growth, risks among others retains its significant effect on financial performance alongside the additional variables.

Further research is recommended to establish whether the SMEs exhibit the same relationship as the quoted firms in Kenya. From the behavioral finance point of view, relationship between liquidity, firm size and leverage should be determined. Further research should determine SMEs' profitability.

Finally, future research should factor out SMEs whose capital structure is highly regulated since inclusion of such small enterprises in the sample unnecessarily distorts the results.

Additionally, further research should cover a long span between of time since five year period is not a sufficient period to come up with generalizations. This period could potentially be too short and therefore capable of yielding biased results as suggested by (Tugba, 2009).

The study also suggests that another model should be tried to check on whether it will be able to give more accurate results this is because this model did not capture all the major variables that have been hypothesized to influence financial performance of small and medium sized enterprises.

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APPENDICES

APPENDIX I: Top 100 SMEs 2013

Rank   **Name of Company**

1   LEAN ENERGY SOLUTIONS LTD.

2   EAST AFRICAN CANVAS CO. LTD

3   DIGITAL CITY LTD

4   PLENSER LTD

5   ALLWIN AGENCIES (K) LTD

6   PROPACK KENYA LTD

7   VIVEK INVESTMENTS LTD

8   POWERPOINT SYSTEMS (EA) LTD

9   CONINX INDUSTRIES LTD.

10   SYNERMEDICA PHARMACEUTICALS (KENYA) LTD

11   COAST INDUSTRIALS & SAFETY SUPPLIES LTD

12   ISOLUTIONS ASSOCIATES

13   WOTECH KENYA LIMITED

14   AVTECH SYSTEMS LIMITED

15   KENYA BUS SERVICE

16   MURANGA FORWARDERS

17   SYNERMED PHARMACEUTICALS (K) LTD

18   TISSUE KENYA LTD

19   KENYA HIGHLAND SEED CO LTD

20	FAMIAR GENERATING SYS LTD
21	ALEXANDER FORBES
22	CHEMICALS & SCHOOL SUPPLIES LTD.
23	CHARLSTONE TRAVEL LIMITED
24	ONFON MEDIA LTD
25	ELITE TOOLS LTD
26	EUROCON TILES PRODUCTS LTD
27	ENDEVOUR AFRICA LIMITED
28	RONGAI WORKSHOP & TRANSPORT LTD
29	R & R PLASTICS LTD
30	CHIGWELL HOLDINGS LTD
31	CLASSIC MOULDINGS LIMITED
32	PEWIN CABS LIMITED
33	NOVEL TECHNOLOGIES EA LTD
34	XTREME ADVENTURES LTD
35	VINTAGE AFRICA LIMITED
36	PUNJANI ELECTRICAL AND INDUSTRIAL HARDWARE LIMITED
37	SPRY ENGINEERING CO. LTD
38	GENERAL CARGO SERVICES LTD
39	PINNACLE (K) TRAVEL & SAFARIS
40	PANESARS KENYA LIMITED
41	SPECIALIZED ALUMINIUM RENOVATORS LTD.
42	CUBE MOVERS LIMITED

43	BROGIIBRO COMPANY LTD
44	TOTAL SOLUTIONS LTD
45	TYREMASTERS LTD
46	XRX TECHNOLOGIES LIMITED
47	SENSATION LTD
48	EUREKA TECHNICAL SERVICES LTD
49	PALBINA TRAVEL LIMITED
50	WAUMINI INSURANCE BROKERS LTD
51	ASL CREDIT LIMITED
52	ZAVERCHAND PUNJA LIMITED
53	CANON CHEMICALS LTD
54	PACKAGING MANUFACTURERS(1976) LTD
55	TRIDENT PLUMBERS LTD
56	TYPOTECH
57	KINPASH ENTERPRISES LTD
58	VEHICLE & EQUIPMENT LEASING LTD
59	SHEFFIELD STEEL SYSTEMS
60	COMPLAST INDUSTRIES LTD
61	DUNE PACKAGING LIMITED
62	HEBATULLAH BROTHERS LIMITED
63	SPICE WORLD LIMITED
64	MUSEUM HILL WINES LTD
65	YOGI PLUMBERS LTD

66	VAJRA DRILL LTD
67	MELVN MARSH INTERNATIONAL LTD
68	KANDIAFRESH PRODUCE SUPPLIERS LTD
69	FAYAZ BAKERS LIMITED
70	SPECICOM TECHNOLOGIES LIMITED
71	MOMBASA CANVAS LTD
72	SILVERBIRDTRAVEL PLUS LTD
73	IRON ART
74	RADAR LIMITED
75	MASTER POWER SYSTEMS
76	HARDWARE & WELDING SUPPLIES
77	MASTERS FABRICATORS LTD
78	SOFTWARE TECHNOLOGIES LTD
79	HERITAGE FOODS KENYA LTD
80	AFRICA TEA BROKERS LTD
81	RAEREX (EA) LIMITED
82	TRAVELSHOPPE COMPANY LTD
83	ORIENTAL GENERAL STORES LTD
84	CHUMA FABRICATORS LTD
85	STATPRINT LTD
86	SOLLATEK ELECTRONICS LTD
87	SMARTBRANDS LTD
88	DE RUITER EAST AFRICA LTD

89	KISIMA DRILLING (EA) LTD
90	CARE CHEMISTS
91	BROLLO KENYA LTD
92	CANON ALUMINIUM FABRICATORS LTD
93	SATGURU TRAVEL & TOURS LTD
94	KUNAL HARDWARE AND STEEL
95	DEEPA INDUSTRIES LIMITED
96	SKYLARK CREATIVE PRODUCTS LTD.
97	UNEEK FREIGHT SERVICES LTD
98	BBC AUTO SPARES LTD
99	LANTECH (AFRICA) LIMITED.
100	POLYTANKS LIMITED

Source: KPMG (2013)

APPENDIX II: FINANCIAL PERFORMANCE

Sampled SMEs	2009	2010	2011	2012	2013
ASL CREDIT LIMITED	0.16	0.12	0.07	0.12	0.15
ZAVERCHAND PUNJA LIMITED	0.11	0.13	0.13	0.14	0.11
CANON CHEMICALS LTD	0.12	0.23	0.19	0.16	0.13
PACKAGING MANUFACTURERS(1976) LTD	0.10	0.08	0.08	0.11	0.11
TRIDENT PLUMBERS LTD	1.00	1.00	0.91	0.78	1.02
TYPOTECH	0.43	0.46	0.50	0.52	0.42
KINPASH ENTERPRISES LTD	0.08	0.05	0.03	0.02	0.01
VEHICLE & EQUIPMENT LEASING LTD	0.01	0.03	0.03	0.03	0.03
SHEFFIELD STEEL SYSTEMS	0.28	0.24	0.23	0.20	0.20
COMPLAST INDUSTRIES LTD	0.12	0.11	0.05	0.06	0.12
DUNE PACKAGING LIMITED	0.07	0.23	0.03	0.00	0.10
HEBATULLAH BROTHERS LIMITED	0.42	0.10		0.39	0.14
SPICE WORLD LIMITED	0.01	0.02	0.01	0.09	0.05
MUSEUM HILL WINES LTD	0.05	0.02	0.03	0.51	0.06
YOGI PLUMBERS LTD	0.14	0.19	0.18	0.27	0.20
VAJRA DRILL LTD	0.12	0.09	0.12	0.15	0.06
MELVN MARSH INTERNATIONAL LTD	0.51	0.16	0.30	0.14	0.18
KANDIAFRESH PRODUCE SUPPLIERS LTD	0.01	0.01	0.02	0.01	0.03
FAYAZ BAKERS LIMITED	0.06	0.06	0.03	0.04	0.02
SPECICOM TECHNOLOGIES LIMITED	0.34	0.13	0.02	0.97	0.23
MOMBASA CANVAS LTD	0.04	0.05	0.05	0.06	0.05
SILVERBIRDTRAVEL PLUS LTD	0.12	0.30	0.60	0.39	0.88
IRON ART	0.12	0.03	0.04	0.12	0.03
RADAR LIMITED	0.19	0.20	0.57	0.69	0.71
MASTER POWER SYSTEMS	0.10	0.14	0.10	0.12	0.13
HARDWARE & WELDING SUPPLIES	0.16	0.14	0.16	0.11	0.20
MASTERS FABRICATORS LTD	0.12	0.11	0.05	0.22	0.15
SOFTWARE TECHNOLOGIES LTD	0.23	0.15	0.18	0.14	0.12
HERITAGE FOODS KENYA LTD	0.05	0.05	0.03	0.08	0.05
AFRICA TEA BROKERS LTD	0.61	0.24	0.43	0.17	0.04

APPENDIX III: LEVERAGE

Sampled SMEs	2009	2010	2011	2012	2013
ASL CREDIT LIMITED	0.17	0.22	0.50	0.87	0.33
ZAVERCHAND PUNJA LIMITED	0.15	1.63	0.82	0.65	6.14
CANON CHEMICALS LTD	0.10	0.96	0.21	0.12	0.15
PACKAGING MANUFACTURERS(1976) LTD	1.21	0.13	0.29	0.65	0.06
TRIDENT PLUMBERS LTD	0.25	0.13	0.18	0.30	0.17
TYPOTECH	0.07	0.52	0.19	0.15	0.43
KINPASH ENTERPRISES LTD	0.51	0.39	0.28	0.64	0.10
VEHICLE & EQUIPMENT LEASING LTD	0.45	0.80	0.21	0.18	0.12
SHEFFIELD STEEL SYSTEMS	0.16	0.07	0.09	0.02	0.24
COMPLAST INDUSTRIES LTD	0.12	0.21	0.51	0.80	0.62
DUNE PACKAGING LIMITED	0.63	1.02	0.60	0.65	6.14
HEBATULLAH BROTHERS LIMITED	0.10	0.61	1.58	1.33	0.64
SPICE WORLD LIMITED	0.60	0.49	0.65	10.75	0.60
MUSEUM HILL WINES LTD	0.24	0.51	0.43	13.95	0.94
YOGI PLUMBERS LTD	0.09	0.98	0.00	0.65	0.38
VAJRA DRILL LTD	0.07	0.03	1.00	0.35	0.58
MELVN MARSH INTERNATIONAL LTD	0.35	0.48	0.45	0.47	0.11
KANDIAFRESH PRODUCE SUPPLIERS LTD	1.14	0.03	0.47	0.74	0.82
FAYAZ BAKERS LIMITED	0.08	0.03	0.53	0.87	0.57
SPECICOM TECHNOLOGIES LIMITED	0.38	0.32	1.67	1.00	0.31
MOMBASA CANVAS LTD	0.03	0.75	0.18	0.11	0.36
SILVERBIRDTRAVEL PLUS LTD	0.23	1.54	1.69	0.43	1.45
IRON ART	0.10	0.74	0.15	6.78	0.88
RADAR LIMITED	0.39	0.31	1.93	0.47	0.09
MASTER POWER SYSTEMS	0.17	0.25	0.83	0.21	0.33
HARDWARE & WELDING SUPPLIES	0.19	0.15	0.33	0.07	0.75
MASTERS FABRICATORS LTD	0.35	0.06	0.51	5.53	0.18
SOFTWARE TECHNOLOGIES LTD	0.20	0.23	0.37	0.12	0.05
HERITAGE FOODS KENYA LTD	9.15	0.47	0.72	1.39	1.01
AFRICA TEA BROKERS LTD	0.81	0.40	0.82	0.27	0.92

APPENDIX IV: LIQUIDITY

Sampled SMEs	2009	2010	2011	2012	2013
ASL CREDIT LIMITED	0.55	0.49	0.49	0.49	0.55
ZAVERCHAND PUNJA LIMITED	1.02	1.00	0.39	0.84	1.22
CANON CHEMICALS LTD	1.84	2.58	1.72	2.62	2.35
PACKAGING MANUFACTURERS(1976) LTD	2.75	4.50	.89	.26	.62
TRIDENT PLUMBERS LTD	8.79	9.89	9.70	6.50	5.36
TYPOTECH	1.23	0.63	.79	.84	.26
KINPASH ENTERPRISES LTD	0.84	0.82	0.83	0.84	0.78
VEHICLE & EQUIPMENT LEASING LTD	1.34	1.44	1.49	1.46	1.54
SHEFFIELD STEEL SYSTEMS	1.74	1.69	1.49	1.05	0.80
COMPLAST INDUSTRIES LTD	1.66	1.36	1.28	1.16	1.20
DUNE PACKAGING LIMITED	2.26	2.07	1.59	1.51	1.06
HEBATULLAH BROTHERS LIMITED	2.34	6.70	1.32	5.94	18.76
SPICE WORLD LIMITED	1.66	1.51	1.41	1.11	1.26
MUSEUM HILL WINES LTD	0.36	0.31	0.32	0.34	0.40
YOGI PLUMBERS LTD	1.07	1.50	2.07	3.35	8.47
VAJRA DRILL LTD	1.77	1.68	1.64	2.10	1.65
MELVN MARSH INTERNATIONAL LTD	1.34	2.17	4.71	1.74	1.49
KANDIAFRESH PRODUCE SUPPLIERS LTD	1.30	1.30	1.38	1.22	0.97
FAYAZ BAKERS LIMITED	1.52	0.91	0.87	1.06	0.92
SPECICOM TECHNOLOGIES LIMITED	1.28	1.15	1.23	0.95	0.93
MOMBASA CANVAS LTD	0.58	0.49	0.37	0.43	0.31
SILVERBIRDTRAVEL PLUS LTD	3.95	3.84	7.97	18.29	12.41
IRON ART	0.73	0.70	0.73	0.74	0.67
RADAR LIMITED	1.29	0.89	0.50	0.27	1.13
MASTER POWER SYSTEMS	1.35	1.36	2.00	2.20	1.25
HARDWARE & WELDING SUPPLIES	1.85	2.13	1.99	2.31	2.25
MASTERS FABRICATORS LTD	1.43	2.24	1.34	2.10	3.41
SOFTWARE TECHNOLOGIES LTD	0.51	0.50	0.67	1.00	0.82
HERITAGE FOODS KENYA LTD	3.83	3.43	0.39	3.02	2.83
AFRICA TEA BROKERS LTD	2.69	2.56	2.37	2.13	1.90

APPENDIX V: FIRM SIZE MEASURED USING NATURAL LOG OF TOTAL ASSETS

Sampled Companies	2009	2010	2011	2012	2013
CANON CHEMICALS LTD	24.06	24.19	24.23	24.23	24.49
PACKAGING MANUFACTURERS(1976) LTD	22.50	22.55	22.67	22.85	22.93
TRIDENT PLUMBERS LTD	21.74	21.89	22.08	22.44	22.46
TYPOTECH	20.88	20.99	21.09	21.25	21.35
KINPASH ENTERPRISES LTD	23.21	23.31	23.41	23.40	23.28
VEHICLE & EQUIPMENT LEASING LTD	21.39	21.34	21.40	21.52	21.54
SHEFFIELD STEEL SYSTEMS	23.88	23.95	24.00	24.25	24.19
COMPLAST INDUSTRIES LTD	21.34	21.55	21.86	21.79	22.04
DUNE PACKAGING LIMITED	22.93	23.21	23.21	23.33	23.37
HEBATULLAH BROTHERS LIMITED	19.34	19.35	19.44	19.65	20.16
SPICE WORLD LIMITED	20.55	20.72	20.90	20.74	20.86
MUSEUM HILL WINES LTD	20.51	20.50	20.48	19.69	19.63
YOGI PLUMBERS LTD	21.70	21.78	21.89	20.89	20.94
VAJRA DRILL LTD	20.58	20.68	20.81	20.98	21.13
MELVN MARSH INTERNATIONAL LTD	25.32	25.36	25.69	25.73	25.72
KANDIAFRESH PRODUCE SUPPLIERS LTD	23.16	23.04	23.17	23.30	22.72
FAYAZ BAKERS LIMITED	24.86	24.72	24.69	24.76	24.71
SPECICOM TECHNOLOGIES LIMITED	24.81	24.98	25.17	25.52	25.62
MOMBASA CANVAS LTD	17.68	18.03	18.81	19.04	19.55
SILVERBIRDTRAVEL PLUS LTD	19.85	19.88	20.08	20.38	20.31
IRON ART	20.35	20.51	20.14	19.82	19.79
RADAR LIMITED	23.10	23.34	23.42	23.72	23.80
MASTER POWER SYSTEMS	22.22	22.29	22.41	22.56	22.73
HARDWARE & WELDING SUPPLIES	20.80	20.90	20.96	21.35	21.47
MASTERS FABRICATORS LTD	24.62	24.75	24.98	25.10	25.16
SOFTWARE TECHNOLOGIES LTD	21.48	21.55	21.50	21.53	21.57
HERITAGE FOODS KENYA LTD	22.59	22.75	22.87	22.91	22.84
AFRICA TEA BROKERS LTD	22.05	22.09	22.80	22.86	22.88