

**THE EFFECT OF CAPITAL STRUCTURE ON THE
PROFITABILITY OF ENERGY UTILITY COMPANIES IN
KENYA**

BY

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DECLARATION

I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

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This research project has been submitted for examination with our approval as the University supervisor.

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DEDICATION

I dedicate this work to my family who provided the enabling environment and have greatly supported my education journey.

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LIST OF ABBREVIATIONS

| | |
|----------------|--|
| ANOVA | Analysis of Variance |
| DFI | Development Finance Institution |
| ERC | Energy Regulatory Commission |
| EU | European Union |
| IPPs | Independent Power Producers |
| KETRACO | Kenya Electricity Transmission Company |
| KenGen | Kenya Electricity Generating Company of Kenya Limited |
| MFI | Micro Finance Institution |
| MOEP | Ministry of Energy and Petroleum |
| MM | Modigliani and Miller |
| NSE | Nairobi Securities Exchange |
| REA | Rural Electrification Authority |
| ROE | Return on Equity |
| ROCE | Return on Capital Employed |
| SMEs | Small and Medium Enterprises |
| SPSS | Statistical Package for Social Science |
| UK | United Kingdom |

ABSTRACT

Capital structure plays an important role in firms financial performance provided it is utilized efficiently and in an effective manner at its optimal level. However, the questions of what constitute an optimal capital structure remains unanswered and the most controversial issue in the finance circles. There is no agreement on the nature of effects of capital structure on the profitability from both the theoretical and different empirical studies. The information asymmetry proposition of Myers and Majluf proposes a negative correlation because companies regardless of their market position would rely on the retained earnings for expansion instead of costly external finance. On the other hand, MM's tax/ interest shield proposition predicts a positive relationship since at higher income level, corporation would want to utilize more debt finance in their capital structure in order to shield their profits from taxation. This study sought to determine the effect of capital structure on profitability of energy utility companies in Kenya. The population for the study was all the 17 energy utility firms in Kenya while the sample consisted of the three major players: KPLC, KenGen and Ketraco. The independent variable was capital structure as measured by debt ratio. The control variables were firm size as measured by natural logarithm of total assets and liquidity as measured by the current ratio. Profitability was the dependent variable which the study sought to explain and it was measured by Return on Equity (ROE). Secondary data was collected for a period of 7 years (2009 to 2016) on semi-annual basis. The study employed a descriptive cross-sectional research design and a multiple linear regression model was used to analyze the relationship between the variables. Statistical package for social sciences version 21 was used for data analysis purposes. The results of the study produced R-square value of 0.046 which means that about 4.6 percent of the variation in profitability of energy utility companies in Kenya can be explained by the three selected independent variables while 95.4 percent in the variation was associated with other factors not covered in this research. The study also found that the independent variables had a weak correlation with profitability of utility companies ($R=0.214$). ANOVA results show that the F statistic was insignificant at 5% level with a $p=0.560$. Therefore the model was not fit to explain profitability of energy utility companies in Kenya. The results further revealed that individually, capital structure, firm size and liquidity were statistically insignificant determinants of profitability of energy utility companies in Kenya. This study recommends that when firms are setting their capital structure they should strike a balance between the tax savings benefit of debt and bankruptcy costs associated with borrowing. High levels of debt has been found to impact positively on profitability of energy utility firms from the findings of this study and so firm managers should maintain debt in levels that impacts positively on profitability to ensure the goal of maximizing shareholders' wealth is attained..

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The selection and adoption of optimum capital structure is a key decision in business that management has to make. Capital structure decisions require an assessment of the right blend of loans and owners contributions that a company requires in financing its investments. This decision is key and should be taken with great importance since it affects the company's returns (Abor, 2005) This subject has elicited great research, the key reason is that getting the right capital structure for a business will affect a company's performance (Brigham and Gapenski, 1971).

There has been great research done on finding the right mix of loans and owners contribution, most notable is the theory of Modigliani and Miller (1958) which pointed out that there is no existence of optimal capital structure. MM further pointed out that capital structure has no bearing on a company's value. In 1963 this theory was modified to include the contribution of the advantage that debt financing had over equity financing (San and Heng, 2011). Subsequently scholars have challenged this theory based on their view of imperfect market conditions.

The energy sector in Kenya is growing, market reforms and vertical unbundling had brought about independent power producers in the electricity generation market, and they are currently 15 electricity generators, one electricity distributing company which is listed in the Securities exchange and one electricity transmission company which is wholly owned by the exchequer. The listed utility companies can obtain equity through issuance of new shares or through rights issue, firms not listed can be funded through venture capitalist and private equity. Debt financing can be obtained through

commercial lenders, Development Finance Institutions (DFI) and government on lent loans at concessionary rates.

1.1.1 Capital Structure

According to Rehman (2013), capital structure is about how entities employ debt and equity as far as financing their assets is concerned. It is a financial tactic that encompasses the utilization of additional borrowed funds (fixed-cost debt instruments) to maximize the return on investment (Al-Otaibi, 2013). Capital structure explains the relation between owner's funds and borrowed funds that makes up a firms financing mix. Capital structure can also be defined as utilization of a third party's funds to finance a firm that might lead to an increase in operating profit and taxes (Barakat, 2014). Debt can take different forms including bond issuance or long term notes payables while shareholders equity might take the form of common stock which has no preference, preference shares and undistributed earnings (Harris & Raviv, 1991).

Debt finance has both the advantages and disadvantages in the growth of companies and expansion of the economy. Debt finance results to benefits such as tax shield and the diminution of free cash flow problems by enhancing managerial behavior while the expenses of debt financing include agency expenses and bankruptcy cost which results from the conflicts between shareholders and debt holders (Fama & French, 2002). Managers therefore, should try to balance these costs and benefits of debt when making debt capital decisions in order to improve performance (Kraus & Litzenberger, 1973).

Capital structure is measured using debt ratios. The debt ratios make comparison of the total debt with the total assets owned by the company. A low ratio indicates that a company depends less on debt while a high percentage indicates that a firm rely more on debt finance. Another measure of capital structure is the ratio of debt to aggregate capital. Nevertheless, the widely preferred method of measuring capital structure as used by various researchers to compute capital structure in studies using capital structure to predict different variables is the proportion of debt to equity (Abhor, 2005).

1.1.2 Profitability

Profitability refers to money that a firm can produce with the resources it has. The goal of most organization is profit maximization (Niresh & Velnampy, 2014). The profitability shows the ability of a firm to generate earnings from the use of its assets for a certain period of time (Farah & Nina, 2016). Profitability involves the capacity to make benefits from all the business operations of an organization, firm or company (Muya & Gathogo, 2016). Profit usually acts as the entrepreneur's reward for his/her investment. As a matter of fact, profit is the main motivator of an entrepreneur for doing business. Profit is also used as an index for performance measuring of a business (Ogbadu, 2009). Profit is the difference between revenue received from sales and total costs which includes material costs, labor and so on (Stierwald, 2010).

Profitability can be expressed either accounting profits or economic profits and it is the main goal of a business venture (Anene, 2014). Profitability portrays the efficiency of the management in converting the firm's resources to profits (Muya & Gathogo, 2016). Thus, firms are likely to gain a lot of benefits related increased profitability (Niresh & Velnampy, 2014). One important precondition for any long-

term survival and success of a firm is profitability. It is profitability that attracts investors and the business is likely to survive for a long period of time (Farah & Nina, 2016). Many firms strive to improve their profitability and they do spend countless hours on meetings trying to come up with a way of reducing operating costs as well as on how to increase their sales (Schreibfeder, 2006).

Profitability is used in measuring performance of the firm. Profitability is one of main aspects of financial reporting for many firms (Farah & Nina, 2016). Profitability is vital to the firm's manager as well as the owners and other stakeholders that are involved or associated to the firm since profitability gives a clear indication of business performance. Profitability ratios are normally used to measure earnings generated by a firm for a certain period of time based on the firm's sales level, capital employed, assets and earnings per share (EPS). Profitability ratios are also used to measure the firm's earning capacity and considered as a firm's growth and success indicator (Majed, Said & Firas, 2012).

1.1.3 Capital structure and Profitability

A company's investment configuration either through use of loans or owners funds and the firms profitability are closely related, decision makers should place great emphasis on how to achieve the best mix of the financial resources at their disposal (Mohammadzadeh, 2013). San and Heng (2011) in their study investigated the hardships involved in determining the optimal capital mix. Bringham and Gapeski (1996) pointed out the optimal capital mix is achieved when the outlays associated with securing debt financing and the attendant cost of securing equity for any investment are abated. This abatement will assist in enhancing value and profitability of the firm. Firms that are more efficient will be in a position to make compromises

between use of loans and equity, this agrees with trade off philosophy that enumerates that organizations can modify their structures either up or down in an effort to growth efficiency.

According to Modigliani and Miller (1986) MM II theory the value of an enterprise will be on an upward trajectory up to a point at which the tax benefits enjoyed while using debt financing will be overtaken by bankruptcy costs. Debt financing has an attendant tax benefit which varies from one jurisdiction to another. In Equity financing the dividend payable is not a deductible expense and would make equity investment to appear to be more enticing. Equity financing is safeguarded against insolvency costs and agency costs (Pandey, 2002).

Financial leverage affects the performance of organizations when measured by return on assets and investments (Baker, 1973). As the level of leverage increases, the firm's savings on taxes increases up to a level when it reaches optimum such that taking on more leverage reduces profitability because of the agency costs that come with debt (Roden & Lewellen, 1995). According to Fama and French (1998) application of debt financing in excess brings about agency challenges in monitoring the investing behaviors of management staff. The management may find themselves holding excess cash flows which may influence them to undertake some projects for their own mileage as opposed to the wealth creation for the shareholders.

According to Jensen and Meckling (1984), debt has an influence on the quality of the investment opportunities that are undertaken by the management by forcing managers to invest in the projects, which add value to the shareholders. This in return minimizes agency and other related costs hence enhancing profitability of the firms. The effect of the capital structure on the firm's profitability has for long time been investigated by

different researchers and seen to have an effect on the profitability of firms. For instance, Eldomiaty and Azim (2008) carried out a research on the effects of capital structure on the firm's financial performance and established that capital structure is positively related to the profitability of the firms.

1.1.4 Energy Utility Companies in Kenya

The energy utility companies in Kenya structured into three categories, based on the mandate of the energy utility companies. These mandates are namely electricity generation, electricity distribution over low voltage and electricity transmission which is over higher voltage. These electric utility companies operate within a greater mandate of the vision 2030. A good energy system will lead to an increase in growth in the various sectors of the economy and is pillars of the vision (Vision 2030). With the aspiration of the Vision 2030 in mind it is important to ensure that there is efficiency in this sector and that all the gains are passed on to the consumer in order to spur economic growth. It is therefore important that energy utility firms to adopt the right optimal capital structure.

To increase their profitability, energy and utility firms should efficiently manage their capital structure components in order to minimize costs and maximize profits in their operations. Capital structure decisions play a key role in the overall firm strategy in order to enhance shareholder firm value in both energy and utility firms (Siddiquee, Khan, Shaem & Mahmud, 2009). Determining the optimal composition and level of long term debt and specific short term debt relative to equity can enable an energy and utility firm to gain competitive advantages over its rivals (Haq & Zaheer, 2011).

1.2 Research Problem

Capital structure plays an important role in firms financial performance provided it is utilized efficiently and in an effective manner at its optimal level. However, the question of what constitute an optimal capital structure remains unanswered and the most controversial issue in the finance circles (Kajola, 2010). There is no agreement on the nature of effects of capital structure on the profitability from both the theoretical and different empirical studies. The information asymmetry proposition of Myers and Majluf (1984) proposes a negative correlation because companies regardless of their market position would rely on the retained earnings for expansion instead of costly external finance. On the other hand, MM's tax/ interest shield proposition predicts a positive relationship since at higher income level, corporation would want to utilize more debt finance in their capital structure in order to shield their profits from taxation. Jensen and Meckling (1986) also support that view and consider debt as disciplining tool that forces managers to invest in projects, which add value to shareholders hence enhancing firm's performance. Energy Utilities play an essential role in enhancing economic growth of any economy and delivering of their mandate of electricity generation, distribution and transmission. Without a vibrant energy sector the economy of any country will not grow. Having the most optimal and beneficial capital structure for energy utilities will ensure growth of benefits and will enhance reduction in costs related to finding the right capital mix for energy investments, this makes this study vital.

Empirical evidence is largely inconsistent and quite varied on the effect of capital structure on financial performance. Nirajini and Priya (2013) discovered a positive correlation linking capital structure and financial performance. Sebnem and Vuran (2012) affirmed this when they found a positive correlation between firm performance

and financial structure. Saeedi and Mahmoodi (2011) did the study on the effects of capital structure on performance of firms in the Tehran Stock Exchange and concluded that capital structure has no effects on the performance of firms. Akbarian (2013) explored the impact of leverage on firms' performance in Tehran stock exchange and found that there exist a negative relationship between leverage and free cash flow per share but the study also found a significant positive relationship with return of equity.

Locally, Gichuhi (2016) found an insignificant association between capital structure choice and financial performance of Kenyan listed firms. Macharia (2016) found capital structure and profitability of listed construction and allied firms at NSE to have a weak negative relationship. Koech (2013) and Ogutu et al., (2015) affirmed this when they concluded that capital structure is inversely related to performance. The conclusion is contrary to Njeri and Kagiri (2015) who found that capital structure and financial performance of listed commercial banks are positively correlated. The lack of consensus among the various scholars on the effect of capital structure on profitability is reason enough to conduct further examination on the area of study. In addition, most of the local studies done have concentrated on the effect of capital structure on performance of firms in other sectors and not necessarily on energy and utility firms. More research needs to be done on the area of capital structure and profitability. This paper will seek to identify how capital structure influence profitability of energy and utility firms in Kenya. It will attempt to give an explanation to the research question; what is the effect of capital structure on profitability of energy and utility firms in Kenya?

1.3 Objectives of the study

To investigate the effect of capital structure on the profitability of energy utility companies in Kenya.

1.4 Value of the study

This study's findings will be used as a reference by scholars, students and researchers who might want to undertake studies in the same field. The study will also help both researchers and scholars in identifying research gap in this field which will prompt and guide them in executing further studies.

Value of this study is to the various managers who are tasked with the management of energy and utility companies in Kenya; this study provides useful information and recommendations to assist them in making more informed management decisions leading to shareholders' wealth maximization. The study increases the pool of knowledge available to assist both energy and utility companies and other firms on the optimal capital structure to improve their performance and ensure sustainability.

The outcome of this study will also aid the various regulatory agencies when developing legislation and regulatory framework around companies' capital structure. The regulators will thus consider this study as they formulate policies that will create a favorable environment for investors.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The researcher in conducting in this section will look at all the theories that relate to capital structure and all the recognized studies on the topic. It contains the theoretical review, determinants of profitability, empirical review, the conceptual framework and a summary of the literature.

2.2 Theoretical Literature Review

This section looks at theoretical review of the study. The section reviews how different theories address the research topic. Main theories discussed here are the Modigliani and Miller theory, Trade off theory and Pecking order theory.

2.2.1 Modigliani and Miller Theory

Modigliani and Miller (1958) contended that the capital structure of a company is immaterial to the company's worth, supposing faultless markets and zero business deal charges. Modigliani and Miller (1963) presented the influence of business revenue levies on the capital structure of a company and established that companies will upsurge their use of debt to exploit the duty deductibility of interest. Though, greater debt funding upsurges the likelihood of insolvency. Market symmetry must be real in which the value of using debt financing equals increased peril of insolvency owing to the great leverage of companies. This was supported by Staking and Babbel (1995) who argued that they concurred with the hypothesis made by Modigliani and Miller.

Modigliani and Miller (1963) revised their previous opinion through integrating duty welfares as causes of the capital structure of companies. Important feature of tax policy is that interest is a tax deductible outlay. Company which remits duties obtains partly counterweighing interest duty shield in the form of smaller levies remited. Consequently, as Modigliani and Miller (1963) propose, companies ought to expenditure equally considerable debt capital as possible acceptable to exploit their worth. Alongside with company tax policy, scholars were also concerned in investigating the situation of individual duties levied on persons.

2.2.2 Trade-off Theory

This theory was proposed by Myers (1984). The theory holds that, there exists an optimal capital structure for every firm, which can be determined by balancing the costs and benefits of equity. As a result, a firm decides on how much debt capital and how much equity capital to include in their capital structure by balancing on the costs and benefits of each source. Debt capital results to benefits such as tax shield though high debt levels in the capital structure can result to bankruptcy and agency expenses. Agency expenses results from divergence of interest among the different firm stakeholders and because information asymmetry (Jensen & Meckling, 1976).

Thus, including cost of agency into the trade-off theory signifies that a corporation ascertains its optimal financial structure by balancing the benefit of debt (the tax advantage of debt) against expenses of excessive debt (financial distress) and the resultant equity agency expenses against debt agency costs. The theory further assert that, as firm increases debt in their capital structure, the marginal cost associated with debt increases while the marginal benefits associated with debt decreases until an optimal point is reached. Beyond that point, the marginal costs of debt exceed the

marginal benefits resulting to reduced firm value. In this regard, the firm should set an optimal financial structure in order to enhance its stock returns (Jensen & Meckling, 1976).

According to Myers (1984), firms with more tangible assets should have high debt ratios while firms with more intangible assets should depend more on equity capital because they are subject to lose of value in case of liquidation. Under this theory, firms should evaluate the various costs and benefits of each debt level and determine an optimal debt structure that balances the incremental costs and incremental benefits (debt tax shields against costs of bankruptcy). This further explains why firms are partly financed by equity and also partly financed by debt in their capital structure.

2.2.3 Pecking Order Theory

According to this theory, developed by Myers and Majluf (1984), there is no predefined optimal capital structure but instead asserts that, firms displays different preference for utilizing internal funds or retained earnings over external capital. It is the one of the most significant theories of company leverage and goes against the firm's idea of having distinctive combination of equity and debt finance, which minimizes the corporation costs of funds. It suggests that the firm should follow a well-specified order of priority with respect to financing sources to minimize its information asymmetry costs, first choosing retained earnings, then debt and finally raising equity as a last option. It advocates for retained earnings to be used first in funding long-term projects and when they are exhausted or not available, then debt is issued; and when it is insufficient or not available, equity is issued (Myers, 1984).

The explanation of the pecking order stems from the existence of the information asymmetry where managers are assumed to know more about their company risk,

prospects and project value than external investors including capital markets. According to Myers and Majluf (1984), investors place low value on the company stock because of the inability of managers to convey information on the company prospects including the new investment opportunities identified. This in return makes managers who are believed to be at the core of company information to finance their project using readily available retained earnings. If the retained earnings are insufficient, managers will choose debt capital in preference to issuing equity shares since they are undervalued in the capital markets. The asymmetric information effect therefore favors use of debt over equity and shows management confidence that the newly identified investment opportunity is profitable and the current share price is underpriced (Myers & Majluf, 1984).

2.3 Determinants of profitability of energy utility companies

There are a number of determinants of profitability of utility companies. These factors include capital structure, size, productivity, firm's growth and liquidity.

2.3.1 Capital Structure

The balance between debt and equity in financing firm operations has some level of influence on the level of returns on equity and return on assets recorded in firms. As argued in the capital structure irrelevant theory, in perfect markets, it is assumed that there is perfect flow of information hence no room for arbitrage (Lee, 2009). This means that the net worth of an organization is not affected in any way by the leverage. However, in real world, taxes exist and affect the way organization operates in terms of their capital structure (Njoroge, 2014).

Usage of debt comes with some agency costs like the existence of constraints put by the firm providing debt on how an organization is to run its affairs (Lee, 2009). This may bring about inflexibility in undertaking some projects even if they promise greater return on equity (Amato & Burson, 2007). This may negatively affect the overall performance of the organization which will in turn affect its financial performance.

2.3.2 Size

This variable is captured by the amount of property of a company. Assets for utility company's property plant and equipment on which energy utility companies is allowed to generate revenue. It's not widely agreed as to whether the size of an enterprise will affect the capital structure. Titman & Wessel, (1988) in their study positively shows the existence of an affirmative association between the magnitude of the company and the extent of its obligations. This study provides contradicts the pecking order theory which maintains a negative association between the size of the firm and its leverage.

2.3.3 Liquidity

Liquidity refers to the extent by which company meets its immediate obligations in full and in a timely way. Excessive liquidity lead to building up of idle resources that does not create any profits for the firm while low levels of liquidity on the other hand, lead to damage of company goodwill, reduce credit standings and it can also lead to compulsory liquidation of company's assets. It cannot be doubted that every firm desires to maximize profitability by maintaining appropriate level of liquidity. However, magnifying profits at the expense of liquidity can cause serious trouble to

the company, which can lead to financial insolvency as well. As a result, firm should properly manage their liquidity in order to maximize their profitability (Vieira, 2010).

Assets are said to be liquid if such assets can be swiftly be changed into cash. Whether a firm has or is coming up with readily available capital base to facilitate its operation, is a critical performance concern in relation to the firm's liquidity. Liquidity of the firm is measured using liquidity ratios such as cash ratios, current ratios, quick ratios and the changes in the working capital of the firm (Brealey et al., 2001). The capability of the firm to pay its maturing obligations on a timely way is of vital importance and is closely related to firm's performance and existence. The inability of the firm to maintain sufficient liquidity level can make the company insolvent and jeopardize its operations (Gitman, 2003).

2.3.4 Productivity

A firm productivity is measured by its turnover or revenues. These revenues are from electricity generation/ transmission / distribution activities this is revenue directly attributable to generating transmission and distribution activities undertaken by players in the energy sector. This revenue either comes from end user tariffs for the case of Kenya power and KETRACO and power purchase costs from Kenya power to KenGen. There exists a great association between productivity and efficiency levels. High productivity leads to higher incomes and profits.

2.3.5 Firm Growth

The expected expansion and growth trajectory of any firm will have a affirmative outcome on the debt financing that spans for more than one year and an adverse effect on debt that has a term less than one year (Ellilli & Farouk, 2011) Pecking order

theories support this assertion since there exists a positive association between growth and leverage (Myer, 1977) brings out a strong argument that firms that heavily invest in for futuristic growth may encounter great difficulties borrowing against this assets, this may be occasioned by agency problems. This implies an adverse association in considering the two variables; growth and company's indebtedness. A company's future growth is firm's growth is indicated by the upturn in the growth of value of the firm's assets (Berger, Bruno & Frankline, 2008)

2.4 Empirical Literature Review

There are numerous empirical studies both locally and internationally to support the relationship between capital structure and financial performance but these studies have produced mixed results.

2.4.1 International Studies

Xue and Shuai (2013) in their study examined listed Swedish firms during the financial crisis of 2007. Using regression analysis and ANOVA tests, they confirmed an adverse association between company's loans and owners' equity decisions on the financial health of the company, in addition debt ratios increase before the crisis then gradually declined and then normalized after three years.

Mohohlo (2013) probed the bearing of capital structure on the firm value of firms listed on Johannesburg Stock Exchange (JSE). The focus was on a sample of 65 nonfinancial firms listed on JSE on grounds that regulations dictate the capital structure of financial firms. Secondary sources of data from listed firm's databases, that is, Bloomberg and Mcgregor BFA over the ten year period from 2002 to 2011 were used. The secondary data analyzed in panel data form and subjected to regression analysis led to a deduction that no statistical relationship exists between

firm value and capital structure of JSE listed firms. While the financial structure of financial firms is regulated, all financial firms cannot have the same financial structure; the researcher ought to have included the financial firms and studied them separately to see if the relationship still holds for the financial firms.

Enekwe, Agu and Eziedo (2014) explored effect of financial leverage on financial performance of Nigeria pharmaceutical companies. The study used secondary data for the year 2001 to 2012 a sample of three companies. The study employed Pearson correlation and regressions models to analyze data collected. It was established that both debt ratio and debt-equity ratio had a negative relation with profitability when measured using ROA. The study also found that the ration on interest coverage had a positive relation with profitability of pharmaceutical companies in Nigeria. However, the study revealed that debt to equity ratio, debt ratio and interest coverage ratio had insignificant impact on profitability of the pharmaceutical industry in Nigeria.

Abeywardhana (2015) conducted a study based on a 10 year period on SME in the UK, his study focused on non-financial services in the UK. From his research he noted a negative relation between company's loans and owners' equity decisions on the financial health of the company; in this study other determinants such as size of the enterprise were found to hold more weight. The ratio between loans with repayment terms that spun for more than a year to firm's size had a negative association with firm's health. In conclusion SMEs have a higher preference for use of debt financing than equity.

2.4.2 Local Studies

Arimi (2010) undertook a research on the industrial and allied firms in the NSE. He used a study period of 4 years, this study reviewed the debt equity decisions and effect

of on the financial health of the companies under the industrial and allied section in the NSE. He notes that an adverse association exists between the ratio of a company's indebtedness and owners' equity and return on owners' equity any rational firm would not find it attractive to look for debt financing when ROE is on the upsurge.

Kuria (2013) studied on the effect of capital structure on the financial performance of commercial Banks in Kenya. The study was piloted on 35 commercial banks in Kenya which were in operation in Kenya for five years of study from 2008 to 2012. The various ratios of these commercial banks were computed from the various data collected from the data extracted from their financial statement for the period. The data was analyzed using a linear regression model using to establish if there is any significant relationship of capital structure and the financial performance of these commercial banks. The finding of the analysis concluded that there was no significant relationship between the capital structure and the financial performance of commercial banks in Kenya.

Tale (2014) investigated the link among capital structure and financial performance of non-financial registered firms at the Nairobi securities exchange in Kenya between the periods January 2008 to December 2013. The study population consisted of all the 40 non- financial listed firms and duly registered with capital market authority. Secondary information used was got from financial statements of listed firms. Data was analyzed using a regression model. Financial performance was established to be absolutely connected to debt-to-equity proportion.

Njeri and Kagiri (2015) probed the influence of financial structure on financial performance of banks listed on Nairobi Securities Exchange. Debt to equity ratio was the proxy for measuring capital structure while net profit margin, ROA and ROE were

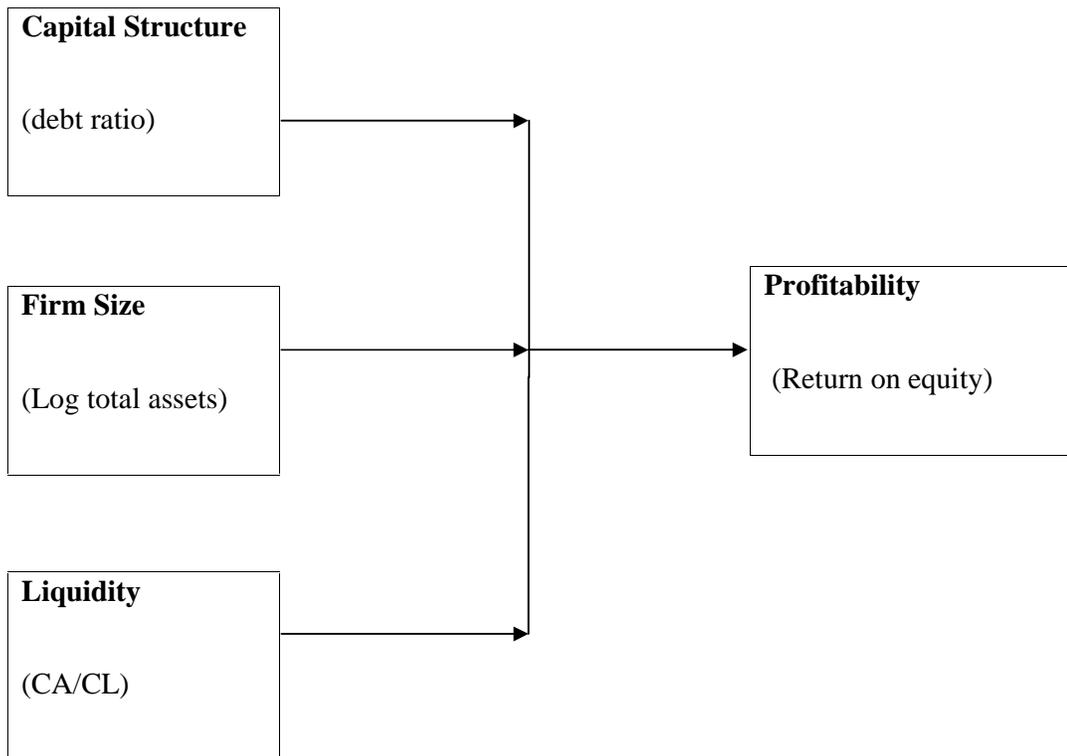
used to measure financial performance. The descriptive research study design was used and primary data obtained by administering questionnaires to 35 respondents who were mainly branch managers of listed banking institutions. The collected data was then subjected to correlation and multiple regression analysis, leading to the conclusion that 56.4% of financial performance of listed commercial banks could be explained by the capital structure of the firm. Given that this study relied on views of branch managers as opposed to using available secondary data, the results may reflect the opinion of the respondents as opposed to the facts.

Mwangi and Birundu (2015) conducted a study to investigate the impact capital structure has on the financial performance of SMEs in Thika County for the period 2009 to 2011. The research design used in the study was a descriptive design and multiple regressions together with correlation analysis were utilized. The study observed that capital structure, asset tangibility and asset turnover are not significant in the financial performance of the firms under study.

2.5 Conceptual Framework

Usage of debt comes with some agency costs like the existence of constraints put by the firm providing debt on how an organization is to run its affairs (Lee, 2009). This may negatively affect the overall performance of the organization which will in turn affect its profitability. The current study sought to investigate whether this relationship holds. The factors characterized here were profitability and capital structure. The independent variable was capital structure as measured by debt ratio. The control variables were firm size as measured by natural logarithm of total assets and liquidity as measured by the current ratio. Financial performance was measured by return on equity.

Figure 2.1: The Conceptual Model



Independent variables

Dependent variable

Source: Researcher (2017)

2.6 Summary of Literature

From the numerous studies done on this subject matter it is evident that there still exists numerous contradicting results. The studies undertaken have not been able to conclusively close out on the inconsistencies on the effect of company's loans and owners' equity decisions on the financial health of the company. Further no specific work has been done on the energy utility companies who operate mostly on project finance and corporate finance basis. The studies done in this area only focused on the listed companies in the energy and petroleum category in the NSE. My research will

enhance further the work already done by including firms that are not yet listed. This study will enhance the knowledge gap in this subject matter.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section enumerates the approaches used to establish associations between in the topic of study. The chapter therefore comprise of the following subsections: research design, target population, data collection and data analysis and test of significance.

3.2 Research Design

Research design is the general arrangement of how one provides a solution to the research questions. From the objectives, it is evident that the research is both of a quantitative and qualitative nature. Descriptive cross-sectional design was used for the study. This design was adopted since it permits the researcher to break down relationships among a substantial number of factors in a study. Descriptive research also allows an analyst to break down how several variables either independently or in mix may influence a specific phenomenon being contemplated. The cross-section research design enabled the researcher to build up and clarify the connections among factors, for this situation, capital structure and profitability of energy utility companies in Kenya.

3.3 Population and Sample

The energy sector has 15 power generators, one off taker and one transmission company. This research targeted the major players in the market and sampling was done based on market share. In this regard only KenGen which is a public listed company which has over 70% market share was used in the generation market in the generation category, KETRACO which is the only market player in the transmission

category was selected and Kenya Power which is the only electricity distribution company in the distribution category was also considered in this review.

3.4 Data Collection

Data was exclusively collected from a secondary source. The secondary data was obtained solely from the published Annual financial reports of the selected firms for the period contained from July 2010 to June 2017 and was captured in a data collection sheet. The end result was information detailing capital structure and profitability on semi-annual basis. The specific data collected was firms' revenue, current liabilities, long term liabilities, current assets and equity. This period was selected since KETRACO was incorporated in 2009 and its first audited statements are in 2010.

3.5 Diagnostic Tests

Linearity show that two variables X and Y are related by a mathematical equation $Y=c+bX$ where c is a constant number. The linearity test was obtained through the scatterplot testing or F-statistic in ANOVA. Normality is a test for the assumption that the residual of the response variable are normally distributed around the mean. This was determined by Shapiro-walk test or Kolmogorov-Smirnov test. Autocorrelation is the measurement of the similarity between a certain time series and a lagged value of the same time series over successive time intervals. It was tested using Durbin-Watson statistic.

Multicollinearity is said to occur when there is a nearly exact or exact linear relation among two or more of the independent variables. This was tested by the determinant of the correlation matrices, which varies from zero to one. Orthogonal independent variable is an indication that the determinant is one while it is zero if there is a

complete linear dependence between them and as it approaches to zero then the multicollinearity becomes more intense (Burns & Burns, 2008).

3.6 Data analysis

The SPSS software version 21 was used in the analysis of the data. The researcher quantitatively presented the findings using tables. The data was analyzed using various financial ratios since financial ratios easily summarize the quantities of data and can be easily used to draw performance comparisons while dealing with time series factors. The following regression model below was used:

The regression model took the form of

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

Where: Y = Profitability as measured by ROE on semi-annual basis

β_0 = y intercept of the regression equation.

β_1 , β_2 and β_3 = are the slope of the regression

X_1 = Capital structure as measured by debt ratio given as long term debt / (shareholders equity + long term debt)

X_2 = Firm size, as given by; Natural logarithm of total assets

X_3 = Liquidity, as given by Current Assets divided by Current Liabilities

ϵ = error term

3.6.1 Tests of Significance

To test the statistical significance the F- test and the t – test were used at 95% confidence level. The F statistic was utilized to establish a statistical significance of regression equation while the t statistic was utilized to test statistical impact of study coefficients.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter focused on the analysis of the collected data from the selected individual companies' websites to establish the effect of capital structure on profitability of energy utility companies in Kenya. Using descriptive statistics, correlation analysis and regression analysis, the results of the study were presented in table forms as shown in the following sections.

4.2 Response Rate

This study targeted the three major energy utility companies in Kenya for a period of seven years from 2010 to 2016. Data was obtained from all the three companies representing a response rate of 100%. From the respondents, the researcher was able to obtain secondary data on Return on equity, capital structure, firm size and liquidity.

4.3 Diagnostic Tests

The study looked for data that would be able to meet the objectives of the study. The data collected from the various companies' websites was cross checked for errors to test the validity of the data sources. The research assumed a 95 percent confidence interval or 5 percent significance level (both leading to identical conclusions) for the data used. These values helped to verify the truth or the falsity of the data. Thus, the closer to 100 percent the confidence interval (and thus, the closer to 0 percent the significance level), the higher the accuracy of the data used and analyzed is assumed to be.

The researcher carried out diagnostic tests on the collected data. The null hypothesis for the test was that the secondary data was not normal. If the p-value recorded was more than 0.05, the researcher would reject it. The results of the test are as shown in Table 4.1.

Table 4.1: Normality Test

| Profitability | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
|-------------------|---------------------------------|----|------|--------------|----|------|
| | Statistic | Df | Sig. | Statistic | Df | Sig. |
| Capital Structure | .165 | 39 | .300 | .880 | 39 | .784 |
| Firm Size | .172 | 39 | .300 | .869 | 39 | .723 |
| Liquidity | .156 | 39 | .300 | .906 | 39 | .822 |

a. Lilliefors Significance Correction

Source: Research Findings (2017)

Both Kolmogorov-Smirnova and Shapiro-Wilk tests recorded o-values greater than 0.05 which implies that the research data was normally distributed and therefore the null hypothesis was rejected. The data was therefore appropriate for use to conduct parametric tests such as Pearson’s correlation, regression analysis and analysis of variance.

4.4 Descriptive Analysis

Descriptive statistics gives a presentation of the mean, maximum and minimum values of variables applied together with their standard deviations in this study. Table 4.2 below shows the descriptive statistics for the variables applied in the study. An analysis of all the variables was obtained using SPSS software for the period of seven years (2010 to 2016). ROE which was the dependent variable in this study had a mean of 0.123126 and a standard deviation of 0.1238125. Capital structure had a

mean of .562826 with a standard deviation of .1987047. Firm size resulted to a mean of 1.6125 with a standard deviation of .10539. Liquidity recorded a mean of 1.471649 with a standard deviation of 1.1394626.

Table 4.2: Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|--------------------|----|---------|---------|----------|----------------|
| ROE | 39 | .0041 | .4645 | .123126 | .1238125 |
| Capital Structure | 39 | .3133 | .9734 | .562826 | .1987047 |
| Firm Size | 39 | .87608 | 3.6724 | 1.6125 | .10539 |
| Liquidity | 39 | .3156 | 6.5259 | 1.471649 | 1.1394626 |
| Valid N (listwise) | 39 | | | | |

Source: Research Findings (2017)

4.5 Correlation Analysis

Correlation analysis is used to establish if there exists a relationship between two variables which lies between (-) strong negative correlation and (+) perfect positive correlation. Pearson correlation was employed to analyze the level of association between the profitability of energy utility companies in Kenya and the independent variables for this study (capital structure, firm size and liquidity).

The study found out that there was a weak positive and statistically insignificant correlation ($r = .024$, $p = .883$) between capital structure and profitability. The study also found out that there was a weak positive and insignificant correlation between firm size and profitability of energy utility companies as evidenced by ($r = .144$, $p =$

.383). Liquidity was found to have a weak negative and insignificant association with profitability as evidenced by ($r = -.185$, $p = .259$). Although the independent variables had an association to each other, the association was not strong to cause Multicollinearity as all the r values were less than 0.70. This implies that there was no Multicollinearity among the independent variables and therefore they can be used as determinants of profitability of energy utility companies in regression analysis.

Table 4.3: Correlation Analysis

| | | ROE | Capital Structure | Firm Size | Liquidity |
|---|---------------------|-------|-------------------|-----------|-----------|
| ROE | Pearson Correlation | 1 | .024 | .144 | -.185 |
| | Sig. (2-tailed) | | .883 | .383 | .259 |
| Capital Structure | Pearson Correlation | .024 | 1 | -.343* | -.032 |
| | Sig. (2-tailed) | .883 | | .032 | .846 |
| Firm Size | Pearson Correlation | .144 | -.343* | 1 | -.307 |
| | Sig. (2-tailed) | .383 | .032 | | .057 |
| Liquidity | Pearson Correlation | -.185 | -.032 | -.307 | 1 |
| | Sig. (2-tailed) | .259 | .846 | .057 | |
| *. Correlation is significant at the 0.05 level (2-tailed). | | | | | |

Source: Research Findings (2017).

4.6 Regression Analysis

Profitability of energy utility companies in Kenya was regressed against three predictor variables; capital structure, firm size and liquidity. The regression analysis was undertaken at 5% significance level. The study obtained the model summary statistics as shown in table 4.4 below.

Table 4.4: Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1 | .214 ^a | .046 | -.036 | .1260204 | 1.501 |

a. Predictors: (Constant), Liquidity, Capital Structure, Firm Size

b. Dependent Variable: ROE

Source: Research Findings (2017).

R squared, being the coefficient of determination indicates the deviations in the response variable that is as a result of changes in the predictor variables. From the outcome in table 4.4 above, the value of R square was 0.046, a discovery that 4.6 percent of the deviations in profitability of energy utility companies in Kenya are caused by changes in capital structure, firm size and liquidity of the firms. Other variables not included in the model justify for 95.4 percent of the variations in profitability of energy utility companies. Also, the results revealed that there exists a weak relationship among the selected independent variables and the profitability as shown by the correlation coefficient (R) equal to 0.214. A durbin-watson statistic of 1.501 indicated that the variable residuals were not serially correlated since the value was more than 1.5.

Table 4.5: Analysis of Variance

| Model | Sum of Squares | Df | Mean Square | F | Sig. |
|--------------|----------------|----|-------------|------|-------------------|
| 1 Regression | .027 | 3 | .009 | .560 | .645 ^b |
| Residual | .556 | 35 | .016 | | |
| Total | .583 | 38 | | | |

a. Dependent Variable: ROE

b. Predictors: (Constant), Liquidity, Capital Structure, Firm Size

Source: Research findings (2017)

The significance value is 0.645 which is more than $p=0.05$. This implies that the model was statistically insignificant in predicting how capital structure, firm size and liquidity affect profitability of energy utility companies in Kenya. The researcher used t-test to determine the significance of each individual variable used in this study as a predictor of profitability of energy utility companies. The p-value under sig. column was used as an indicator of the significance of the relationship between the dependent and the independent variables. At 95% confidence level, a p-value of less than 0.05 was interpreted as a measure of statistical significance. As such, a p-value above 0.05 indicates a statistically insignificant relationship between the dependent and the independent variables. The results are as shown in table 4.6

Table 4.6: Model Coefficients

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---------------------|-----------------------------|------------|---------------------------|-------|------|
| | B | Std. Error | Beta | | |
| (Constant) | .103 | .096 | | 1.071 | .292 |
| 1 Capital Structure | .038 | .111 | .061 | .341 | .735 |
| Firm Size | .014 | .000 | .119 | .639 | .527 |
| Liquidity | -.016 | .019 | -.147 | -.835 | .409 |

a. Dependent Variable: ROE

Source: Research Findings (2017)

From the above results, it is evident that capital structure and firm size produced positive and statistically insignificant values for this study (low t-values (.341 and .639), $p > 0.05$). Liquidity produced a negative and statistically insignificant values for this study ($t = -.835$, $p = 0.409$).

The following regression equation was estimated:

$$Y = 0.103 + 0.038X_1 + 0.014X_2 - 0.016X_3$$

Where,

Y = Profitability of energy utility companies

X₁ = Capital Structure

X₂ = Firm size

X₃ = Liquidity

On the estimated regression model above, the constant = 0.103 shows that if selected dependent variables (capital structure, firm size and liquidity) were rated zero, profitability of energy utility companies would be 0.103. A unit increase in capital structure would lead to increase in profitability by 0.038. A unit increase in firm size would lead to an increase in profitability by 0.014 while a unit increase in liquidity would lead to a decrease in profitability by -0.016.

4.7 Discussion of Research Findings

The study sought to determine the effect of capital structure on profitability of energy utility companies in Kenya. Capital structure as measured by debt ratio, firm size as measured by natural logarithm of total assets and liquidity as measured by current ratio were the independent variables while profitability as measured by return on equity was the dependent variable. The effect of each of the independent variable on the dependent variable was analyzed in terms of strength and direction.

The Pearson correlation coefficients between the variables revealed that a weak positive correlation exists between capital structure and profitability but the association is insignificant. The relationship between liquidity and profitability was also found to be weak negative and insignificant while firm size was found to have a weak and insignificant positive relationship with profitability of energy utility companies in Kenya.

The model summary revealed that the independent variables: capital structure, firm size and liquidity explains 4.6% of changes in the dependent variable as indicated by the value of R^2 which implies that there are other factors not included in this model that account for 95.4% of changes in profitability of energy utility companies in Kenya. The model is not fit at 95% level of confidence since the F-value is 0.560. This

confirms that overall the multiple regression model is statistically significant, in that it is a suitable prediction model for explaining how the selected independent variables affects profitability of energy utility companies in Kenya.

The findings of this study are in line with Mwangi and Birundu (2015) who conducted a study to investigate the impact capital structure has on the profitability of SMEs in Thika County for the period 2009 to 2011. The research design used in the study was a descriptive design and multiple regressions together with correlation analysis were utilized. The study observed that capital structure, asset tangibility and asset turnover are not significant in the profitability of the firms under study.

This study is in contrast with Tale (2014) who investigated the link between capital structure and financial performance of non-financial registered firms at the Nairobi securities exchange in Kenya between the periods January 2008 to December 2013. The study population consisted of all the 40 non- financial listed firms and duly registered with capital market authority. Data was analyzed using a regression model. Financial performance was established to be absolutely connected to debt-to-equity proportion.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the previous chapter, conclusion, limitations encountered during the study. This chapter also elucidates the policy recommendations that policy makers can implement to achieve the expected profitability of energy utility firms in Kenya. Lastly the chapter presents suggestions for further research which can be useful by future researchers.

5.2 Summary of Findings

The study sought to investigate the effect of capital structure on profitability of energy utility companies in Kenya. The independent variables for the study were capital structure, firm size and liquidity. The study adopted a descriptive cross-sectional research design. Secondary data was obtained from individual company's websites and was analyzed using SPSS software version 21. The study used annual data for the three sampled energy utility companies in Kenya covering a period of seven years from 2010 to 2016.

From the results of correlation analysis, a weak positive correlation exists between capital structure and profitability. The study also showed that there exist a weak positive relationship between firm size and profitability of energy utility companies in Kenya while the relationship between liquidity and profitability was found to be weak and negative. The association between each of the independent variables and profitability of energy utility companies in Kenya was however found to be insignificant.

The co-efficient of determination R-square value was 0.046 implying that the predictor variables selected for this study explains 4.6% of changes in the dependent variable. This means that there are other factors not included in this model that account for 95.4% of changes in profitability of energy utility companies in Kenya. The model was found not fit at 95% level of confidence since the F-value was less than the critical value obtained from the table. This confirms that overall the multiple regression model was statistically insignificant, in that it is not a suitable prediction model for explaining how the selected independent variables affects profitability of energy utility companies in Kenya.

The regression results show that when all the independent variables selected for the study have zero value, profitability of energy utility companies would be 0.103. It is also noted that a unit increase in capital structure would lead to an increase in profitability by 0.038. A unit increase in firm size would lead to an increase in profitability by 0.014 while a unit increase in liquidity would lead to a decrease in profitability by -0.016.

5.3 Conclusion

From the study findings, the study concludes that profitability of energy utility companies in Kenya is affected by capital structure, firm size and liquidity though not to a significant extent. The study found that capital structure had a positive but significant effect on profitability of energy utility companies in Kenya. The study therefore concludes that an increase in debt financing by energy utility firms leads to an increase in profitability though not to a significant extent. The study found that firm size had a positive but insignificant effect on profitability and therefore it is concluded that higher levels of firm size leads to an increase in profitability of energy utility firms though not to a large extent. Liquidity was found to have a negative but

statistically insignificant relationship with profitability and therefore this study concludes that higher levels of liquidity negatively affect profitability of energy utility companies though not to a large extent.

This study concludes that independent variables selected for this study capital structure, firm size and liquidity influence profitability of energy utility companies but not to a large extent as they only explain 4.6 percent of changes in the dependent variable. It is therefore sufficient to conclude that these variables do not significantly influence profitability as shown by the p value in anova summary. The fact that the four independent variables explain 4.6 of changes in profitability imply that the variables not included in the model explain 95.4% of changes in profitability are explained by other variables not in this study.

This finding concurs with Mwangi and Birundu (2015) who conducted a study to investigate the impact capital structure has on the financial performance of SMEs in Thika County for the period 2009 to 2011. The research design used in the study was a descriptive design and multiple regressions together with correlation analysis were utilized. The study observed that capital structure, asset tangibility and asset turnover are not significant in the financial performance of the firms under study.

5.4 Recommendations

The study established that there was a positive influence of capital structure on profitability of energy utility companies in Kenya. The study recommends that when firms are setting their capital structure they should strike a balance between the tax savings benefit of debt and bankruptcy costs associated with borrowing. High levels of debt has been found to impact positively on profitability of energy utility firms from the findings of this study and so firm managers should maintain debt in levels

that impacts positively on profitability to ensure the goal of maximizing shareholders' wealth is attained. The study found out that a positive relationship exists between profitability and firm size. This study recommends that energy utility firms' management and directors should aim at increasing their asset base by coming up with measures and policies aimed at enlarging the firms' assets as this will eventually have a direct impact on profitability of the firms. From the findings of this study, big firms in terms of asset base are expected to perform better than small firms and therefore firms should strive to grow their asset base.

Liquidity was also found to have a negative effect on profitability of energy utility companies. This study recommends that a comprehensive assessment of energy utility firm's immediate liquidity position should be undertaken to ensure the company is operating at sufficient levels of liquidity that will lead to improved profitability. This is because a firm's liquidity position is of high importance since it influences the firm's current operations.

5.5 Limitations of the Study

The scope of this research was for seven years 2010-2016. It has not been determined if the results would hold for a longer study period. Furthermore it is uncertain whether similar findings would result beyond 2016. A longer study period is more reliable as it will take into account major happenings not accounted for in this study.

One of the limitations of the study is the quality of the data. It is difficult to conclude from this research whether the findings present the true facts about the situation. The data that has been used is only assumed to be accurate. The measures used may keep on varying from one year to another subject to prevailing condition. The study utilized secondary data, which had already been obtained and was in the public domain, unlike

the primary data which is first-hand information. The study also considered selected determinants and not all the factors affecting profitability of energy utility firms mainly due to limitation of data availability.

For data analysis purposes, the researcher applied a multiple linear regression model. Due to the shortcomings involved when using regression models such as erroneous and misleading results when the variable values change, the researcher cannot be able to generalize the findings with certainty. If more and more data is added to the functional regression model, the hypothesized relationship between two or more variables may not hold.

5.6 Suggestions for Further Research

This study focused on capital structure and profitability of energy utility firms in Kenya and relied on secondary data. A research study where data collection relies on primary data i.e. in depth questionnaires and interviews covering all energy utility companies in Kenya is recommended so as to compliment this research.

The study was not exhaustive of the independent variables affecting profitability of energy utility companies in Kenya and this study recommends that further studies be conducted to incorporate other variables like management efficiency, growth opportunities, corporate governance, industry practices, age of the firm, political stability and other macro-economic variables. Establishing the effect of each variable on profitability of energy utility companies will enable policy makers know what tool to use when maximizing shareholder's wealth.

The study concentrated on the last seven years since it was the most recent data available. Future studies may use a range of many years e.g. from 2000 to date and this can be helpful to confirm or disapprove the findings of this study. The study

limited itself by focusing on three energy utility firms in Kenya. The recommendations of this study are that further studies be conducted on all energy utility firms operating in Kenya and or firms in other sectors. Finally, due to the shortcomings of regression models, other models such as the Vector Error Correction Model (VECM) can be used to explain the various relationships between the variables.

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APPENDICES

APPENDIX 1- LIST OF UTILITY COMPANIES IN KENYA

| UTILITY COMPANIES IN KENYA | |
|--|---------------------|
| GENERATION UTILITIES | MARKET SHARE |
| 1 KENGEN | 70.02% |
| 2 IBERAFRICA | 4.66% |
| 3 MUMIAS CO-GENERATION PLANT | 1.12% |
| 4 ORPOWER | 5.97% |
| 5 KIPEVU II (Tsavo) | 3.18% |
| 6 RABAI POWER | 3.87% |
| 7 IMENTI TEA FACTORY CO. LTD | 0.01% |
| 8 THIKA POWER | 3.74% |
| 9 GIKIRA SMALL HYDRO POWER STATION | 0.02% |
| 10 GULF POWER | 3.44% |
| 11 TRIUMPH POWER | 3.57% |
| 12 BIOJOULE BIOGAS POWER PLANT | 0.09% |
| 13 REGEN-TEREM | 0.21% |
| 14 GURA | 0.09% |
| 15 CHANIA | 0.02% |
| TRANSMISSION COMPANY | MARKET SHARE |
| 16 KENYA ELECTRICITY TRANSMISSION COMPANY OF KENYA | 100% |
| DISTRIBUTION COMPANY | MARKET SHARE |
| 17 KENYA POWER AND LIGHTING COMPANY LIMITED | 100% |

APPENDIX 2- SAMPLE SELECTED FROM POPULATION

| | | |
|---|---|---------------------|
| | POWER GENERATING UTILITIES | MARKET SHARE |
| 1 | KENGEN | 70.02% |
| | TRANSMISSION COMPANY | MARKET SHARE |
| 2 | KENYA ELECTRICITY TRANSMISSION COMPANY OF KENYA | 100% |
| | DISTRIBUTION COMPANY | MARKET SHARE |
| 3 | KENYA POWER AND LIGHTING COMPANY LIMITED | 100% |