THE DETERMINANTS OF CAPITAL STRUCTURE IN THE ENERGY AND PETROLEUM COMPANIES LISTED IN THE NAIROBI SECURITIES EXCHANGE

BY

TURERE SIMON PATITA

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DECLARATION

This is to declare that this research paper is my own original work and has not been presented for the award of any degree in any University.

Turere Simon Patita

Signed: _____Date:_____

Supervisor

This management research paper has been submitted for examination with my approval as the University supervisor.

Mr. Herick Ondigo

Signed: _____Date:_____

DEDICATION

I dedicate this paper to my dear parents Mr. Kikanae Ole Turere and Mrs. Salaine Ene Turere for bringing me up, taking good care of me, believing in me and for always desiring the best for me. I also dedicate it to my dear wife Damaris Kireu and my sons Gad Olomunyak and Asher Lenchipai for always giving me the reason to rejoice and to continue working hard.

Above all I thank the Almighty God for always renewing my strength, blessing me and for guiding me in all my endeavors.

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ABSTRACT

One of the most important policies of any company is the financial policy. Financial planning involves estimation of the capital requirements of a firm as well as the determination of its composition. The objectives of financial planning include determining capital requirements, determining capital structure, and framing financial policies with regards to cash control, lending, and borrowings. A finance manager ensures that the scarce financial resources are utilized optimally in the best possible manner at least cost in order to get maximum returns on investment. Attaining an optimum capital structure is a key concern of each company due to the impact associated with financial distress and bankruptcy. Capital structure and its determinants have gained prominence among researchers over the years.

This paper analyses some of the theories on the subject of capital structure to explain what could possibly be the determinants of capital structure. The study looks into the determinants of capital structure among the energy and petroleum companies quoted at the NSE from the year 2000 to 2010. Among the expected determinants of capital structure studied were: size of the company, age of the company, financial performance, growth rate and ownership structure. This study sought to establish the determinants of capital structure of the energy and petroleum companies listed at the NSE.

The study shows that size of the company, its age, growth rate and ownership structure are key determinants of capital structure while financial performance has an insignificant impact on capital structure.

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ABBREVIATIONS

EBIT	Earnings before Interest and Taxes
ERC	Energy Regulatory Commission
ESOP	Employee Share Ownership Plan
FISD	Financial Information Services Division
GDC	Geothermal Development Company
IPPs	Independent Power Producers
KenGen	Kenya Generating Company
KETRACO	Kenya Electricity Transmission Company
KNBS	Kenya National Bureau of Statistics
KPLC	Kenya Power & Lighting Company
MM	Modiligliani and Miller
MOE	Ministry of Energy
NSE	Nairobi Securities Exchange
OMCs	Oil Marketing Companies
REA	Rural Electrification Authority
SIIA	Software and Information Industry Association
SPSS	Statistical Package for Social Science

CHAPTER ONE

INTRODUCTION

1.1Background of the Study

Financial planning involves estimation of the capital requirements of a firm as well as the determination of its composition. It entails framing financial policies in relation to procurement, investment and administration of funds of an enterprise. The objectives of financial planning include determining capital requirements, determining capital structure, and framing financial policies with regards to cash control, lending, and borrowings. A finance manager ensures that the scarce financial resources are utilized optimally in the best possible manner at least cost in order to get maximum returns on investment.

1.1.1 Capital Structure

Capital structure refers to the combination of debt and equity capital a firm uses to finance its long term operations. The capital structure decision can affect the value of the firm by changing the firm's expected earnings, its cost of capital or both. One of the most important objectives of determining an optimal capital structure of the firm is to ensure the lowest cost of capital and to maximize shareholders' wealth (Ellili & Farouk, 2011). Capital structure is one of the effective management tools to manage the cost of capital. An optimal capital structure is reached at a point where the cost of the capital is at its minimum. The capital structure of a firm is therefore one of the most important issues in corporate finance and firm managers strive to maintain a capital structure that minimizes financial and business risks on the firm, while maximizing shareholders wealth. In

finance, the traditional view has been that firms strive to maintain an optimal capital structure that balances the costs and benefits associated with varying degrees of financial leverage. The determination of an optimal capital structure as well as the factors that determine it have been and still is an important area in financial management. However, as Myers puts it, the puzzle of how firms make capital structure decisions is still unresolved (Myers, 1984).

Company financing decisions involve a wide range of policy issues which have implications at both the macro and micro levels. At the macro level, such decisions affect capital market development, interest rate, security price determination, and regulation. At the micro level, such decisions affect capital structure, corporate governance and company development (Green et al., 2002). Earlier studies by Singh & Hamid (1992) and Singh (1995) using data on companies in selected developing countries, found that firms in developing countries made significantly more use of external finance to finance their growth than industrialized countries. They also found that firms in developing countries rely more on equity finance than debt finance. In India, Cobham & Subramaniam (1998) used a sample of larger firms and found that Indian firms use lower external and equity financing. In a study of large companies in ten developing countries, Booth et al. (2001) also found that debt ratios varied substantially across developing countries, but overall were not out of line with comparable data for industrial countries.

1.1.2 Expected Determinants of Capital Structure

To understand how firms finance their operations, it is necessary to examine the determinants of their capital structure decisions. The hypothesized determinants of capital structure are: age of the company, size of the company, the company's growth prospects, profitability, ownership structure, among others. Much work in the field of corporate finance has focused on why firms choose differing proportions of debt and equity to finance their operations. The arbitrage argument of Modigliani and Miller (1958) stimulated a lot of research in the area of capital structure. Since then, many studies were carried out on description of factors influencing capital structure decisions. One of the sub theories for example proposes that capital structure may be influenced by the life stage of the firm as financing needs may change with the changing circumstances of the firm (Damodaran, 2001; Bender & Ward, 1993). In general, the trade-off theory, agency theory and pecking order theory were among some of the theories developed by researchers. The trade-off theory of capital structure which is also referred to as the tax based theory states that optimal capital structure is obtained where the net tax advantage of debt financing balances leverage related costs such as financial distress and bankruptcy, holding firm's assets and investment decisions constant (Baxter, 1967 & Altman, 2002). This therefore suggests that it is not an optimal decision for the firm to issue equity.

Myers (1984) suggests that managers will be reluctant to issue equity if they feel it is undervalued in the market. Pecking order theory proposed by Myers states that firms prefer to finance new investment, first internally with retained earnings, then with debt,

and finally with an issue of new equity. Myers argues that an optimal capital structure is difficult to define as equity appears at the top and the bottom of the 'pecking order'. Internal funds incur no flotation costs and require no disclosure of the firm's proprietary financial information that may include firm's potential investment opportunities and gains that are expected to accrue as a three result of undertaking such investments. The agency cost theory of capital structure states that an optimal capital structure will be determined by minimizing the costs arising from conflicts between the parties involved. (Jensen & Meckling, 1976) argue that agency costs play an important role in financing decisions due to the conflict that may exist between shareholders and debt holders. If companies are approaching financial distress, shareholders can encourage management to take decisions, which, in effect, expropriate funds from debt holders to equity holders. Sophisticated debt holders will then require a higher return for their funds if there is potential for this transfer of wealth. Debt and the accompanying interest payments, however, may reduce the agency conflict between shareholders and managers.

1.1.3 The Kenyan Energy Sector

The energy sector in Kenya comprises three subsectors: the electricity subsector, renewable energy subsector and the petroleum subsector. The institutional framework in the electricity subsector includes Ministry of Energy (MOE), Energy Regulatory Commission (ERC), Kenya Generating Company (KenGen), Kenyan Power and Lighting Company (KPLC), the Rural Electrification Authority (REA), Kenya Electricity Transmission Company (KETRACO), Geothermal Development Company (GDC) and Independent Power Producers (IPPs). In addition to MOE and ERC, the petroleum subsector consists of Kenya Petroleum Refineries Limited which processes crude oil;

Kenya Pipeline Company Limited which deals with the storage, transportation and handling of refined petroleum products in the country; National Oil Corporation of Kenya Limited which is mandated to stabilize the petroleum supply market by participating in all aspects of the petroleum industry; and Oil Marketing Companies (OMCs) which are local and international companies licensed to undertake the importation, storage, wholesale, export and retail of petroleum products. The private sector is currently involved in various economic activities in the energy sector such as oil, gas and coal exploration, petroleum distribution and power generation. The Petroleum Institute of East Africa plays a key role in capacity building and awareness creation in the petroleum subsector. Oil Exploration and Production Companies are licensed to undertake exploration and production of petroleum products. MOE is continuously improving the investment environment to encourage more investments in the energy sector and involvement by the private sector.

The energy and petroleum sector in Kenya is a unique sector in that it drives all the other sectors in the economy, and it is one of the infrastructural enablers of the three "pillars" of Vision 2030. The level and intensity of commercial energy use is a key indicator of the degree of economic growth and development. The power sector, however, faces challenges like a weak power transmission and distribution infrastructure, high cost of power, low per capita power consumption and low countrywide electricity access. With the energy sector being important in the Kenyan economy, it is eminent that maximization of benefits and reduction of costs is in the core of the sector's objectives. This makes the concept of an optimal capital structure as a tool for guiding financial policy as well as what really determines capital structure very important in controlling

cost of capital and maximizing shareholders' wealth. In addition, instability in oil and electricity destabilizes all the other important sectors of the economy.

According to the Kenya Economic Survey 2012 (KNBS, 2012), the annual average price of oil increased from US$ 79.16 per barrel in 2010 to US $ 110.60 per barrel in 2011. The high international prices and the weakened Kenya shilling contributed to the high local oil prices. In addition, the report highlighted that the total demand of petroleum products grew by 1.9 per cent, and that petroleum imports contributed 57.7% of the three key imports, namely, petroleum, industrial machines, and road motor vehicles. Another key factor driven to a great extent by oil instability is inflation and the Economic Survey 2012 shows that annual inflation increased to 14.0 per cent in 2011 from 4.1 per cent in 2010. The rise in inflation was mainly on account of, among others, sharp increase in oil prices. Another unique feature of the petroleum subsector is the ongoing exploration of fossil fuel in Kenya, and the already discovered oil wells in Turkana County which point to potential expansion of this sector. There is also an increased demand of electricity in Kenya both by individuals, industries and other institutions, and hence this sector needs, and it is in fact experiencing, both expansion and diversification into other forms of energy. As per the Economic Review 2012, the installed capacity expanded by 8.6 per cent in 2011 as compared to 2010, the total electricity generation increased by 8.4 per cent, and the growth in electricity generation was mainly driven by 27.3 per cent increase in production from thermal oil. Total electricity consumption registered a growth of 9.0 per cent in 2010 compared to 2011, and the number of connections under the Rural Electrification Programme rose by 23.2 percent.

1.1.4 The Nairobi Securities Exchange

The NSE is a company limited by shares which was constituted in 1954 as a voluntary association of stockbrokers registered under the Societies Act. The business of dealing in shares was however confined to the resident European community at the time until independence in 1963. The NSE is located at the Nation Centre in Nairobi. The NSE is a full service securities exchange which supports trading, clearing and settlement of equities, debt, derivatives and other associated instruments. Currently, there are fifty six active companies listed at the NSE. In 2004, a Memorandum of Understanding between the Tanzanian Dar-es-Salaam Stock Exchange, the Uganda Securities Exchange and the NSE was signed to form the East African Securities Exchanges Association. To facilitate growth and development of the East African Securities' Market, the NSE and Uganda Securities Exchange signed a Memorandum of Understanding on mass cross listing in 2006.

The NSE's website has been upgraded to enhance easy and faster access of accurate, factual and timely trading information. The upgraded website is used to boost data vending business. Also, a Wide Area Network platform is in place to eradicate the need for brokers to send their dealers to the trading floor to conduct business. The NSE marked the first day of automated trading in government bonds through the Automated Trading System in November 2009. The automated trading in government bonds marked a significant step in the efforts by the NSE and Commercial Bank Kenya towards creating depth in the capital markets by providing the necessary liquidity. NSE then uploaded all government bonds on the Automated trading System. There is also a Broker Back Office

system which has the capability to facilitate internet trading to improve the integrity of the exchange trading systems and facilitate greater access to the securities market. The NSE is a member of the Financial Information Services Division (FISD) of the Software and Information Industry Association (SIIA). The new initiative gives investors the opportunity to access current information and it also provides a reliable indication of the Kenyan equity market's performance during trading hours.

1.2 Statement of the Problem

In Kenya, energy, one of the infrastructural enablers of the three "pillars" of Vision 2030, makes the energy sector and the level and intensity of commercial energy use a key indicator of the degree of economic growth and development. Weak power transmission, weak distribution infrastructure, high cost of power, low per capita power consumption and low countrywide electricity access are some of the hurdles in the power sector in Kenya. The energy sector as a whole has been undergoing restructuring and reforms as articulated in the Sessional Paper No.4 of 2004 and the Energy Act No.12 of 2006. Maximization of benefits and reduction of costs in this sector is very important since it contributes to stability of all the other sectors of the economy. This makes the concept of an optimal capital structure and what determines it very important since financing decisions affect the value of the firm in one way or another.

This study examined the explanatory power of the theories proposed in the financial literature to explain the variations in capital structures across the energy and petroleum companies listed in the NSE. The study analyzed the capital structure determinants of the companies. Modigliani & Miller (1958), show that subject to some restrictive conditions

the impact of financing on the value of the firm is irrelevant. According to the static trade-off theory, firms select optimal capital structure by comparing the tax benefits of debt, the costs of bankruptcy and the costs of agency of debt and equity (Shubiri, 2010). This suggests the disciplinary role of debt and the fact that debt suffers less from informational costs than outside equity. Optimal leverage minimizes cost of capital and maximizes firm value. It was therefore important to know whether companies have a target debt ratio, how quickly they adjust towards this ratio, and what factors determine how quickly they adjust.

Although several studies have been done on the determinants of capital structure of the companies listed at the NSE, some of these studies came up with conflicting conclusions. In addition, these studies were carried out on different points in time and for different durations and some of the studies focused on specific sectors of the economy and it was necessary to ascertain if these findings hold in other sectors of the economy, and in this case, the energy sector. For example, Kinyua, (2005) did an empirical investigation of capital structure determinants for small and medium-sized enterprises in Kenya and found out that profitability, company size, asset structure, management attitude towards risk, and the lender's attitude towards the company are key determinants of capital structure. There was therefore need to ascertain whether this finding holds in other sectors of the economy. Munene (2006) found out that profitability alone does not account for variations in capital structure, Arimi (2010) concluded that there's a negative relationship between performance and capital structure, Kamau (2010) concluded that there's a weak relationship, while Ondiek (2010) found out that there is a positive

relationship. These findings therefore conflicted making further research in this area necessary. A study on the determinants of the capital structure of these companies was therefore an important research area which would give an empirical analysis of what really determines the capital structure, and this would contribute in the continuing search for an optimal capital structure for firms. This study was relevant in the Kenyan context given the important role the energy and petroleum companies are expected to play in economic growth. It was expected that the findings of this study will have important policy implications for Kenyan firms.

This study attempted to examine specific determinants of capital structure. In particular, the paper looked at five such expected determinants which are: firm's age, firm's size, financial performance, the growth rate and ownership structure of the energy and petroleum companies listed at the NSE from 2000 to 2010. Five variables multiple regression model was used to assess the influence of defined explanatory variables on capital structure. The energy and petroleum sector in Kenya is a unique sector in that it drives all the other sectors in the economy, and it is one of the infrastructural enablers of the three "pillars" of Vision 2030. The sector in essence greatly influences how firms in other sectors perform in various aspects.

1.3 Objective of the Study

This study sought to establish the determinants of capital structure of the energy and petroleum companies listed at the NSE.

1.4 Value of the Study

This study was important as it would help managers of firms in the choice of financial policy which is one of the most important decisions of the company. It would guide managers in determining the optimal capital structure of the companies and therefore ensure the lowest cost of capital as they aim to maximize shareholders' wealth. In this regard, it would help companies avoid financial distress and bankruptcy. The results of this study would also deliver insights on the capital structure of energy and petroleum companies listed in the NSE. The issue of capital structure is an important strategic financing decision that firms have to make. The study was therefore important for policy makers to be able to give direction towards improving the information environment. Policy makers would be able to place greater emphasis on the facilitation of those capital structure components that would provide a base for further borrowing and reduce business risks due to economic cycles. Also, statistical coefficients associated with the firm's age, size, financial performance, growth and ownership structure will help managers of companies to concentrate on those variables that help optimize the firm's capital structure. For example, if size was found to be a very important factor, it would imply that firms concentrate on the expansion of their business.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter explored various studies carried out on capital structure to establish the relationship between the various expected determinants of capital structure and the capital structure of the energy and petroleum companies listed in the NSE.

2.2 Theoretical Review on Capital Structure

The determination of capital structure has been one of the most controversial topics in finance and several theories have been put forth on this subject. Bradley et al (1984) acknowledge that capital structure has been one of the most contentious issues in the theory of finance. Several years later, Myers also concludes that there is no universal theory of debt-equity choice and there's no reason to expect one (Myers, 2001). The theories that have been put forth are as follows:

2.2.1 Capital Structure Irrelevance Theory

Modigliani and Miller (1958) introduced their capital structure irrelevance theory. The MM theorem states that the value of the company is independent from its corporate financing decisions under certain conditions. The conditions were: no taxes, no transaction costs, no bankruptcy costs, perfect contracting assumptions, and assumption of an efficient and a perfect market. Modigliani and Miller (1963) relaxed the assumptions related to the taxes and showed that their model is no more effective since the debt interest payments are deductible from taxes and lead to a rise in the value of the company. They note that increasing debt increases probability of bankruptcy. Hence, the

optimal capital structure represents a level of leverage that balances the bankruptcy costs and the benefits of the debt finance. They then introduced personal taxes. Miller (1977) argued that the personal taxes reduce the benefits of debt financing and the leverage gains may not be as great as previously.

Since then, several theories have re-looked at the subject of capital structure. These theories are the static trade-off theory, the agency theory, the pecking order theory, information asymmetry theory and the capital structure life stage theory.

2.2.2 Static Trade-Off Theory

This theory proposes that firms attempt to achieve an optimal capital structure that maximizes the value of the firm by balancing the tax benefits, with the bankruptcy costs, associated with increasing levels of debt (Myers, 1984). A brief look at how this theory came about may help us appreciate it more. Modigliani and Miller (1958) published their arbitrage argument showing that the market value of any firm is independent of its capital structure. Based on this argument capital structure should not vary over the firm's lifecycle or from firm to firm. The theory assumed a set of conditions of no information costs, no personal or corporate taxes, no contracting or transaction costs, and a fixed investment policy. Barclay et al (1995) argue that the irrelevance theory was developed under some artificial set of conditions and this led to other capital structure theories. According to Miller (1988), the introduction of taxation effects implies that firms should seek to increase their levels of debt as far as possible. Stiglitz (1988) argued that bankruptcy costs increase as the firm's level of debt increases. This suggests that the

amount of debt present in a firm's capital structure should be limited. It is this argument that evolved into the static trade-off theory.

The static trade-off theory also underwent several new developments. Myers (2001) argues that static trade-off theory implies that highly profitable firms should have high debt ratios in order to shield their large profits from taxation. However, highly profitable firms tend to have less debt than less profitable firms. Warner (1977) suggests that bankruptcy costs are much lower than the tax advantages of debt. This implies much higher debt levels than predicted by the theory. Empirically, some research seems to support the static trade-off theory. Kayhan and Titman (2004) found that firms tend to move towards target debt ratios over the long-term. This finding is consistent with the static trade-off theory implying that the theory offers a possible explanation of how firms choose their capital structure.

Also, Warner (1977) studied bankruptcy costs in the railroad industry between 1933 and 1955 and found that the ratio of the value of direct bankruptcy costs to the market value of the firm appears to fall as the value of the firm increases. Esperenca et al (2003) also support this argument. Importance of bankruptcy costs therefore seem to be inversely related to the firm's growth and development, and therefore large and mature firms are expected to have higher optimal debt ratios and higher levels of debt.

Opler and Titman's (1994) study of indirect bankruptcy costs among retailers suggested that firms in the infancy stage should have lower debt levels than firms in later life stages,

as their bankruptcy costs are higher. Bradley et al (1984) also argued that optimal firm leverage is inversely related to the variability of firm earnings and therefore mature and stable firms, with more predictable earnings, should have higher debt ratios than younger, less predictable firms. Graham (2000) also found that firms at early stages of development tend to have lower levels of debt than firms in the stable or aristocracy life stages.

Trade-off theory therefore suggests that infant firms cannot afford debt as their bankruptcy costs are high and their earnings are too low to use the tax benefit of increasing interest payments. As the firm matures, bankruptcy costs fall and the larger and predictable earnings make the tax shield advantage of debt more beneficial. When the firm has matured and possibly facing a decline it is likely to experience a decrease in earnings, a consequential decrease in the tax shield benefit and resorts to using less debt.

2.2.3 Information Asymmetry or Signaling Theory

Another assumption of Modigliani and Miller's value invariance theory was that the market possesses full information about the activities of firms. Models referring to the signaling theories assume the existence of imperfect and asymmetric information between the various partners of the company. The conflicts of interests are likely to appear between the quite informed managers and the other uninformed partners. To solve this problem, the managers try to communicate their information to the other partners by a signal. There are multiple signals used in finance and allow the investors to make a perfect difference between various companies. This invariance theory assumption of

perfect information was relaxed by Leland and Pyle (1976) and Stephen Ross through the information asymmetry theory of capital structure (Ross 1977).

According to Leland and Pyle (1976), the value of a company is positively correlated with the managerial ownership and each change noticed on the level of managerial ownership results in a modification in the financial policy and by consequence a new value of the company. Leland and Pyle (1977) argue that the higher the managerial ownership in the capital of the company, the larger is the debt capacity. Such strong ownership is highly recognized by the bondholders and signals confidence in the company future investments.

Ross (1977) argue that if instead we assume that managers possess information about the firm's future prospects that the market does not have, then managers' choice of a capital structure may signal some of this information to the market. According to Ross, increasing leverage would signal to the market that the firm's managers are confident about being able to pay interest in future, and are therefore confident about the company's future earnings prospects. He argues that increasing leverage would increase the value of the firm by signaling to investors the size and stability of future cash flows. According to this theory, the managers know the true distribution of the company returns, but investors do not. He argues that higher financial leverage can be used by the managers to signal an optimistic future of the company since the debt is a contractual obligation to repay both principal and interests. The failure to make those payments could lead to bankruptcy and by consequence the managers would lose their jobs. Therefore

adding more debt to the capital structure could be interpreted as a good signal of the managers' optimism about their companies.

Myers and Majluf (1984) assumed that company managers have always more information about the true value of the company than the other investors. Managers will therefore time a new equity issue if the market price exceeds their own assessment of the stock value, that is, if the stocks are overvalued by the market. Since investors are aware of the existence of the information asymmetry they will interpret the announcement of an equity issue as a signal that the listed stocks are overvalued, which subsequently will cause a negative price reaction. The managers can use the information asymmetry to their profit and to reinforce their entrenchment strategy in their respective companies. Besides, they can use their informational advantage in order to get more benefits and to maximize their income (Stiglitz & Edlin, 1992). With this intention, the managers can reduce the threat of the competition of the potential managers on the labor market either by setting up investments strongly dependent on their specific information, or by investing in projects with high information asymmetry.

However, Fama and French (1988) were of a different opinion that more profitable firms tend to have lower levels of debt. They argued that increasing debt actually signals poor prospects for future earnings and cash flow as there will be less internal financing available to fund development. Baeyens and Manigaart (2003) argue that information asymmetries decrease over the lifetime of a firm. However, there is insufficient clarity on

exactly how signaling, within the context of information asymmetries, affects capital structure decisions.

2.2.4 Pecking Order Theory

This theory is based on the asymmetric information between managers and investors. Managers know more about the true value of the company and the company's riskiness than less informed outside investors which affects the choice between internal and external financing (Myers, 1984). To avoid the problem of underinvestment, the managers seek to finance the new project using a security that is not undervalued by the market, such as internal funds or riskless debt. The pecking order theory is able to explain why companies tend to depend on internal sources of funds and prefer debt to equity if external financing is required. According to this theory and if the external funds are needed, the companies prefer the issue of debts to that of stocks because of the low information costs associated with such issue.

The pecking order theory assumes that the companies with high growth opportunities, typically with important needs for funds, would have higher leverage because of the repugnance of the manager to issue stocks. In consequence, the external sources of financing and the least subject to the information asymmetries would be preferable. Within the framework of the trade-off theory, the relationship between the leverage and the performance of the company should be positive. A profitable company will have a preference for the debt because of the deductibility of the interests from the taxable income.

Myers found that firms tend to follow a 'pecking order' in financing their projects. First they use internal equity, then debt, and only then do they use external equity (Myers, 1984). Ross (1977) earlier argued that firms use more debt to overcome information asymmetries and signal better prospects. Myers (2001) however used information asymmetries to argue that managers are unlikely to issue equity because they fear it will signal that the stock price is overvalued. Allen (1993) and Fama and French (1988) like Myers also found that leverage is inversely related to profitability, which supports the pecking order theory view that debt is only issued when there is insufficient retained income to finance investment.

On age of the firm, according to the pecking order theory, we might expect firms in infancy that usually have little retained earnings, to seek the maximum available debt funding before resorting to external equity. On the other hand, prime and stable firms are expected to generate substantial retained earnings and therefore need less debt than they did in their infancy and growth phases. As they move into the stages of decline, retained earnings will decrease and firms again will increase their debt levels to finance acquisitions of young firms. Pecking order theory also suggests a strong relationship between life stage and capital structure (Frielinghaus et al 2005)

2.2.5 Agency Cost Theory

Jensen and Meckling (1976) are the pioneers in introducing the agency theory and in relaxing the assumption of no conflict of interest between the managers and the shareholders. Their financial model is focused mainly on the relationship between the shareholders as the principal and the manager as the agent. Managers do not always act in

the interest of the shareholders and consequently the goal is not always to maximize the value of the company and therefore a conflict of interest arises. Such a conflict of interest will create agency costs that require remedy measures. Jensen and Meckling distinguish between monitoring costs paid by the shareholders to control the managerial actions and to incite the manager to act in their interest; bonding expenditures paid by the managers to prove the quality of their decisions in a way to put the shareholder in confidence and the residual loss corresponding to the divergence of interests between the manager and the shareholders. According to Jensen and Meckling (1976), the managers can use the financial policy to get pecuniary and non pecuniary benefits like prestige, discretionary latitude and empire building. The constraint of financing is not always neutral but it influences the managerial behavior in terms of investment.

The investment decision is therefore not always done according to the dimension of discounted cash flows but also if that could create a conflict of interest between the shareholders and the manager. Jensen and Meckling (1976) take into their account the conflict of interest between the shareholders and the manager in the explanation of the distortions in the investment's choice. They consider a 100% own-managed company which is held completely at the origin by its manager. In the event of opening the capital to the public, a part of the benefits consumed by the manager would be paid by the external shareholders who may have first an opportunistic and a discretionary behavior.

Jensen and Meckling (1976) argue that debt involves three agency costs that arise due to the agency relationship. The first one is the incentive effects associated with leverage due

to the influence of the debt on the investment policy. The second one is the monitoring and bonding costs paid by the bondholders and the owner-manager in order to limit the managerial behavior which results in reductions of the value of the bonds for the bondholders. The last one is the bankruptcy and reorganization costs. According to the agency theory, the optimal financing choices are those which minimize the agency costs and which increase the shareholders' wealth.

Asymmetries between managers and investors may also affect capital structure. Managers have different information about the prospects of the firm than shareholders do and they also have interests that conflict with those of shareholders. Agency costs are a good reason for firms to increase the amount of debt in their capital structure, as debt enables managers to bond their promise to pay out future cash flows (Jensen, 1986). Jensen (1986) argued that agency costs are severe when the company generates substantial free cash flow, and that the control function of debt is most important in old, declining firms that actually need to shrink. Jensen also argued that debt is less effective in reducing agency costs in rapidly growing companies with large and highly profitable investment projects but no free cash flow (Jensen, 1986). The firm with the lowest agency costs is the one that is run by its owner (Ang et al, 2000) and would expect start-up firms run by the entrepreneur to have the least debt.

According to agency cost theory, firms use more debt in their capital structure when investors seek to pressure management to use funds efficiently. Forsberg (2004) found that the debt ratio decreases as agency costs decrease. The reason for this is the increasing

proportion of ownership by management, and the fact that firms with fewer shareholders have more debt than firms with many shareholders. The link between fewer shareholders and more debt suggests that shareholders, who are able to influence capital structure in their favor, do so in a way that increases the level of debt.

Jensen (1986) develops the free cash-flows theory in the optic to limit the managerial discretion. He defines the free cash-flows as the sum of the cash available to the managers after the financing of all the profitable projects. Instead of distributing the free cash-flows to the shareholders in the form of dividends, the managers may prefer to use the free cash-flows in a non profitable diversification. The free cash-flows encourage the managers in increasing the size of their companies beyond the optimal level to either increase the resources under their control increasing their discretionary capacity and prestige; or to increase the level of their compensation (Murphy, 1985). Since all profitable projects have already been undertaken, all the projects financed by free cash-flows are with a negative NPV. Jensen (1986) underlines the important role of the debt in the reduction of the free cash-flows. External distributions like repurchase of stocks or distribution of the dividends reduce the presence of the free cash-flows, improve significantly the forecasts of earnings per share and limit the investment in non profitable projects.

The analysis suggests that it would be optimal to the shareholders to raise the level of debt when the managers follow their personal objectives, and that if the managers exert

their discretion in the choice of the financial policy, the companies are more likely to issue debts on a level lower than the optimum (Morellec, 2001).

2.2.6 Capital Structure Life Stage Theory

This theory deals with the relationship between organizational life stage and capital structure. Bender and Ward (1993) focused on the trade-off between business risk and financial risk. They posit that business risk reduces over the life stages of a firm, allowing financial risk to increase. Hovakimian, et al (2001) also suggested that 'firms should use relatively more debt to finance assets in place and relatively more equity to finance growth opportunities', and should, therefore, use progressively more debt in their financing mix as they mature. Damodaran (2001) also supported this view by proposing that expanding and high-growth firms would finance themselves primarily with equity, while mature firms would replace equity with debt.

Capital structure life stage theory seems to suggest that debt ratios should increase as the firm progresses through the early life stages. Empirically, however, little work has been done to support or refute this idea. Morgan and Abetti (2004) in their analysis of the venture-capital financing of biotech ventures, argued that high technology ventures are so risky that they can only be financed by venture capital and private equity sources. Their view supports the theory that riskier firms in the infancy and growth life stages should use more equity. According to Frielinghaus et al, (2005), firms in infancy and growth stages have a high business risk and cannot afford financial risk, while firms in prime and stable stages can afford the extra risk that accompanies debt financing. Firms in the

declining life stages would experience a growth in business risk and would need to decrease their exposure to debt.

2.3 Determinants of Capital Structure

There are different factors determined by the capital structure theories and that may affect the financial leverage choice. According to Harris and Arthur (1991), the debt ratio increases with fixed assets, non-debt tax shield, growth opportunities and company size and decreases with volatility and profitability. Titman and Wessels (1988) confirm that asset structure, non-debt tax shields, growth, uniqueness, industry classification, size, earnings volatility, and profitability are factors that may affect leverage according to different theories of capital structure. Among the factors, the most common cited are asset tangibility, non-debt tax shield, profitability, size, expected growth, uniqueness, operating risk, industry classification, managerial ownership, and the age of the company. This study looked at five of these factors which include age of the firm, size of the firm, financial performance, expected growth and ownership structure. The paper therefore looked at the literature surrounding these five selected expected determinants of capital structure.

2.3.1 Age of the Firm

The age of the company is considered an important determinant of capital structure in most financial literature. The longer the company is in business, the higher is its ability in taking on more debt and therefore there is a positive relationship between the age and the leverage of a firm. In general the older companies have stronger reputation and good name built up over the years. The managers concerned with the reputation of their

companies tend to act more prudently and avoid risky projects ensuring by consequence a higher quality (Peterson and Rajan, 1994).

In their empirical test, Ellili and Farouk (2011) found out the age of a firm seems not to affect the short term leverage of the company while it negatively affects the long term leverage. Their findings therefore suggest that, the mature companies are no longer interested in accumulating more long term debt in their capital structure. In their study they measure the age of the company by the number of years in business. It was this same measure that will be used in this paper, that is, a company's age is the number of years it has been in business.

2.3.2 Size of the Firm

There is still no consensus among researchers on the impact of the company's size on the capital structure decisions. It is also still not clear if such a relationship exists, and if it does, the nature of the relationship whether inverse or positive. We however see that Titman and Wessels (1988) confirm that there is a positive relationship between the size of a firm and its leverage. They argue that the larger companies are more diversified and have lower variance of their earnings, making them able to tolerate high debt ratios.

However, according to the pecking order theory, there is a negative relationship between the size of a firm and the leverage. The reason for this is that larger companies are more closely observed and they should be more able to issue equity. Rajan and Zingales (1995) support this argument that the larger companies should have lower debt because of less asymmetric information.

Ellili and Farouk (2011) in their empirical analysis of companies traded on Abu Dhabi Stock Exchange found out that the size of a firm has a positive impact on all the leverages which confirms that the larger companies are, in general, more able to tolerate high debt ratios. In their empirical study, they measured the size of the company by the natural logarithm of total assets which was different from the natural logarithm of net sales as measured by Titman and Wessel (1988).   This paper used the same measure as that of Ellili and Farouk (2011) to measure the size of a firm.

2.3.3 Firm Performance

The financial literature provides conflicting evidence on the relationship between the profitability and the capital structure of the company. Myers and Majluf (1984) argue that the companies have a pecking order in the choice of financing their activities and the relationship between leverage and profitability is negative since the internal funds are more preferred than debt. There is therefore a negative relationship between the company's profitability and the level of its debts. It is however generally expected that more profitable companies are more able in tolerating high level of debt since they may be in a good position to meet their obligations easily and on time. They therefore can easily add more debt in their capital structure (Peterson and Rajan, 1994).

Ellili and Farouk (2011) in their empirical analysis of companies traded on Abu Dhabi Stock Exchange found out that profitability is negatively correlated to the long term leverage and positively correlated to the short term leverage. This result reveals that the profitable companies use their internal funds in financing their long term investments and use the short term debt in financing their operating activities. They measure the

profitability of the company by the ratio of earnings before interest and taxes to total assets. They argue that this approach is preferable than the alternative measure by the ratio of earnings before interest and taxes to the sales because it represents the overall efficiency of the company in generating returns for its shareholders, while the alternative measure represents the company's ability to translate sales into profits. In this study, the same measure of profitability as that of Ellili and Farouk (2011) was used.

2.3.4 Firm Growth

Ellili and Farouk (2011) found out that the expected growth of the company has a positive impact on the long term leverage and a negative impact on the short term leverage. Their results confirm that the companies do prefer financing their growth by the long term debt rather than the short term debt.

However, previous empirical results on the relationship between the expected growth and the capital structure were ambiguous. According to the pecking order theory, the relationship between the growth and the leverage is positive since higher growth opportunities imply a higher demand of fund through the preferred source of debt. On the contrary, Myers (1977) argues that due to the agency problems, companies investing in assets that may generate high growth opportunities in the future face difficulties in borrowing against such assets. This suggests that there is a negative relationship between the expected growth and the leverage of the firm. Ellili and Farouk (2011) just like Song (2005) measured the expected growth by the percentage change in total assets. Even though this could also have been measured by using the ratio of market-to-book value,

this paper, like Song (2005) used the percentage change in total assets due to availability of data on this measure.

2.3.5 Ownership Structure

Harris and Raviv (1988) affirm that the managers increase the debt ratio in order to reinforce their control. Managers try to change the capital structure of the companies to control a large fraction of voting rights. Zingales et al (1995) and Zwiebel (1996) argue that threat of takeover forces the managers to issue debts and to prove their alignment. By the issue of bonds, the managers avoid investing in projects with a negative net present value in order to decrease the bankruptcy risk. Amihud and Lev (1981) affirm that the managers having a non diversifiable human capital are more interested in minimizing their risk of employment through the viability of the companies by reducing the debts. Also, Berger, Ofeck and Yermack (1997) find that the entrenched managers avoid debt. For a low level of managerial ownership, the interests of the managers are aligned on those of the shareholders leading to a high level of debts. For a high level of managerial ownership, the level of debt is low. Empirical analysis by Ellili and Farouk (2011) measure managerial ownership as the part of capital held by the manager a view also used by Berger, Ofeck and Yermack, (1997).

Amihud and Lev, (1981) argue that managerial insiders have a somewhat different perspective since many of them have large portions of their personal wealth invested in the firm. The same view was shared by Friend and Hasbrouck, (1988). The wealth that managerial insiders have invested in their employer is composed largely of their employer's common stock and the human capital they have accumulated while working

for the firm. Since these items tend to represent a large proportion of an insider's total wealth, the bankruptcy of the employer would have a major impact on their personal wealth. According to Friend and Hasbrouck (1988), the more wealth a managerial insider has invested in the employer, the greater the incentive they have to minimize the use of debt financing.

Noe and Rebello (1996) argue that the locus of control within a firm is an important determinant of choice of finance. When corporate decisions are dictated by the manager, equity issues will be favored over debt because of the managers' inclination to protect their undiversified human capital and to avoid the performance pressure associated with debt commitments (Berger et al., 1997). However, Abor (2008) argue that the locus of control rests with substantial shareholders that are not represented on the management board, especially of quoted firms. He further argues that the company may take on more debt to limit the scope for managerial discretion and notes that previous empirical studies suggest that managerial ownership should be negatively related to use of debt.

In his empirical study on the determinants of capital structure of Ghanaian firms, Abor (2008) finds that firms with high managerial shareholding rely less on short-term debt. He explains that in order to avoid the pressure and risk associated with debt use, quoted and unquoted firms with high managerial ownership depend less on long-term debt but rely more on short-term debt. He also found out that male-owned and exporting firms depend more on long-term debt finance than female-owned non-exporting firms.

2.4 Empirical Studies on Capital Structure

Arimi, (2010) did a study on the relationship between capital structure and financial performance among firms listed under the industrial and allied sector at the Nairobi Stock Exchange. His study covered four years, from 2004 to 2008. This study found out that, there exists a negative relationship between debt-equity ratio and return on equity (ROE), that is to say, an increase in the debt-equity ratio leads to a decrease in ROE. This implies that companies are unwilling to source for funds externally when ROE is on the increase.

Kamau, (2010) studied the relationship between capital structure and financial performance of insurance companies in Kenya. This study covered four years, from 2006 to 2009. The study found out that there was a weak relationship between financial performance and capital structure. This implies that debt to equity ratio accounted for only a small percentage of financial performance among the companies studied.

Ondiek, (2010) also carried out a study on the relationship between capital structure and financial performance of the firms listed at the Nairobi Stock Exchange. This study concluded that the profitability of a company, its asset tangibility and company size are key determinants of capital structure to various degrees. Size of the company and profitability are therefore important determinants of capital structure.

Kuria, (2010) studied determinants of capital structure of companies quoted at the Nairobi Stock Exchange. This studied covered seven years from 2003 to 2009 and regression was used to analyze the data collected. The study concluded that profitability and asset structure are the determinants of capital structure. Growth was found out to be

not a very important determinant, while size and taxation were seen to have an insignificant influence on capital structure.

Boodhoo, (2009) provide a brief review of literature and evidence on the relationship between capital structure and ownership structure. The paper also provides theoretical support to the determinants of capital structure.

Mehmet and Eda, (2009) tested whether average leverage level of sector and leverage level of sector leader are effective on capital structure decisions of selected firms and sectors listed in Istanbul Stock Exchange for the period of 1999 to 2006. They found out that, while sector averages are effective at a meaningful extent in white goods sector, it was seen that it affects leverage level of sector leader considerably. They show that, in their study using panel data analysis method considering firms as a whole without discrimination, both sector average and sector leader display a positive relation with leverage level of firms.

Munene, (2006) studied the impact of profitability on capital structure of companies listed at the Nairobi Stock Exchange. The study was carried out over a period of six years from 1999 to 2004 and the data collected was analyzed using regression. This study established that profitability on its own does not exclusively account for variability in capital structure. The study revealed that there are more variables that could be in play to determine a firm's capital structure.

Fakher et al, (2005) provides evidence of the capital structure theories pertaining to a developing country and examines the impact of the lack of a secondary capital market by analyzing a capital structure question with reference to the Libyan business environment.

The results show that both the static trade-off theory and the agency cost theory are pertinent theories to Libyan companies' capital structure whereas there was little evidence to support the asymmetric information theory. The lack of a secondary market may impact on agency costs, as shareholders who are unable to offload their shares might exert pressure on managers to act in their best interests.

Matibe, (2005) studied the relationship between ownership structure and capital structure for companies quoted at the Nairobi Stock Exchange. This study covered the years from 1998 to 2002 and made use of correlation analysis to analyze the data collected. The study found out that firms owned by the state are more likely to borrow than those owned by individuals, institutions or foreign investors. This implies that state-owned firms have a greater appetite for debt than those owned by individuals and other investors. Also, it may mean that state-owned firms have more access to debt than the individual owned and other investor owned firms.

Kinyua, (2005) did an empirical investigation of capital structure determinants for small and medium-sized enterprises in Kenya. The study covered four years, from 1998 to 2002 and used correlation and regression to analyze the data collected. The study found out that profitability, company size, asset structure, management attitude towards risk, and the lender's attitude towards the company are key determinant of capital structure. There was therefore need to ascertain whether this finding holds in other sectors of the economy.

Keshar, (2004) examined size, business risk, growth rate, earnings rate, dividend payout, debt service capacity, and the degree of operating leverage as expected determinants of

capital structure of the companies listed at the Nepal Stock Exchange as of July 16, 2003. They used an eight-variable multiple regression model to assess the influence of defined explanatory variables on capital structure. Their study shows that size, growth rate and earning rate are statistically significant determinants of capital structure of the listed companies.

Odinga, (2003) studied the determinants of capital structure of companies listed at Nairobi Stock Exchange for a period of thirteen years from 1989 to 2001. His study employed multiple regression to analyze the data collected. The study found out that profitability and non-debt tax shield are the most significant determinants of a company's capital structure. There was need therefore to determine if this is the case during a different period of time, 2001 to 2010.

Chonde, (2003) did a study of determinants of capital structures of public sector enterprises in Kenya. The study covered the period from 1994 to 1998 and utilized regression analysis to determine the relationships. The study found out that public sector firms did not strive to maximize profits in a competitive market and their managers had no autonomy, capacity and motivation to respond to competition. They therefore found it difficult to go for loans and they depended on government funding which was categorized as equity.

Wolfgang and Roger (2003) tested leverage predictions of the trade-off and pecking order models using Swiss data. They found that leverage of Swiss firms is comparatively low and that more profitable firms use less leverage and firms with more investment

opportunities apply less leverage. Their results confirm the pecking order model but seem to go contrary to the trade-off model.

Philippe et al, (2003) also analyzed the determinants of the capital structure for a panel of 106 Swiss companies listed in the Swiss stock exchange using static and dynamic tests for the period 1991 to 2000. They found that the size of companies, the importance of tangible assets and business risk are positively related to leverage, while growth and profitability are negatively associated with leverage.

Dev et al, (1997) did an analysis to confirm the linkage between capital structure and strategic posture of the firm. They found that managers structure the selection of debt and capital intensity in a means consistent with the strategic goal of long-run control of systematic risk.

Titman and Wessels, (1988) extended empirical work on capital structure theory by examining a much broader set of capital structure theories, many of which have not previously been analyzed empirically. Since the theories have different empirical implications in regard to different types of debt instruments, they analyzed measures of short-term, long-term, and convertible debt rather than an aggregate measure of total debt. They also used a factor-analytic technique that mitigates the measurement problems encountered when working with proxy variables.

2.5 Conclusion

The various studies done on capital structure have not yet resolved the puzzle of attaining an optimal capital structure by firms. The various theories and empirical studies reviewed in this chapter have further revealed the contradicting views of the various researchers on

the subject of capital structure. On determinants of capital structure, only few studies have been done in Kenya and specifically on the relationship between ownership structure and capital structure. There are various determinants of capital structure which include age of the firm, size of the firm, expected growth, firm's performance and the ownership structure of the firm. No study had been carried to highlight the relationship between ownership structure and capital structure of the energy and petroleum companies quoted at the NSE. This study would address the knowledge gap on the relationship between size, age, expected growth, performance and ownership structure and capital structure of the energy and petroleum companies quoted at the NSE.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explores the methodology that was used in this study clearly explaining the research design that was employed, the population of interest, data collection and data analysis. It therefore explains sources of the data collected, methods of data collection employed, and the techniques that were used to analyze the collected data. It will also explain the model that was used as well as clearly elaborating all the variables of interest.

3.2 Research Design

This was a descriptive study of capital structure determinants of the four energy and petroleum companies listed in the NSE. The study therefore employed a casual design. Capital structure was measured through the firms' balance sheets to be able to control the definition and measurement of the term consistently across different firms. The ratio of total interest-bearing debt to capital, where capital is total debt plus equity, was used as the measure of capital structure. The study employed cross-sectional research design to gather the data. This design was chosen because it was cost effective and the data can be collected within a short period of time. Cross-sectional research involves observation of a representative subset at a defined time. The study was a quantitative study and the data collection covered ten years from 2001 to 2010.

3.3 Population

The population was composed of four energy and petroleum companies listed in the NSE. Only listed companies were considered since both book and market values of equity was

used in computing total leverage. The market information was not available for the unquoted companies. The quoted companies were Total Kenya Limited, KenolKobil Limited, KenGen Company Limited and Kenya Power & Lighting Company Limited. The study focused on the entire population of the quoted companies and therefore no sampling was necessary. Expectedly, the results of the study would be sufficient to give an insight into the determinants of capital structure among the energy and petroleum companies in Kenya, both quoted and unquoted.

3.4 Data Collection

The main source of data was the NSE. Information and data was hunted on the official website of the NSE where any available financial statements were downloaded. The specific companies' websites were also used to get other pertinent data like age of the companies and financial reports for recent years. For data that was not available online, the same was purchased from the NSE. Measures of the firms' age, size, financial performance, growth rate and ownership structure were computed based on the data collected.

3.5 Data Analysis

This study employed multiple regression analysis to measure the impact of the different factors on the company's capital structure. The data analysis helped to explore cross-sectional and time series data simultaneously. To analyze the relationship between the dependent and the independent variables, the following regression equation was used:

$$TL = \beta_0 + {}_aS + bA + cFP + dGR + eOS + E$$

Where;

TL is total leverage measured as the ratio of total interest-bearing debt to capital

β_0 is a constant term

S is size of the firm measured as the natural logarithm of total assets

A is age of the firm measured as the number of years in business

FP is financial performance measured as the ratio of earnings before interest and taxes (EBIT) to total assets

GR is growth rate measured by the percentage change in total assets

OS is ownership structure measure as the proportion of capital held by the managers, the government or any other parties likely to significantly influence the financing decision of the company.

E is the random error term

And a, b, c, d and e are coefficients.

Ellili and Farouk (2011) used the same model only that, in this study four variables, which include asset structure, uniqueness, operating risk and industry have not been included. This is because the companies studied were in the same industry and could be similar in asset structure, uniqueness, risk and industry. The model tested the null hypothesis that there is no significant impact of the factors upon the capital structure choice. The dependent variable is the total leverage and the independent variables are the different factors as previously determined, which include, size, age, financial performance, the expected growth rate and ownership structure of the company.

Data was analyzed using Statistical Package for Social Science (SPSS). This particular package was chosen because it is user-friendly. Data was to be presented in figures and

tables. Summary statistics of the mean, standard deviation, minimum and maximum of all the variables for both dependant and independent variables were constructed. Also, the correlation matrix of the independent variables was created. The results of the regression of the model were then developed and tables were used to show the regression results for the total leverage. The estimation of the data with fixed effects of the above model invalids the presence of the individual effects.

T-test was used to determine whether there was a linear relationship between the dependent variable and each independent variable in isolation. The following hypotheses were used:

H_0: There is no linear relationship between the dependent variable and each independent variable.

H_1: There is a linear relationship between the dependent variable and each independent variable.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents analysis and findings of the study as set out in the research objective and research methodology. The study findings are presented on capital structure determinants of the four energy and petroleum companies listed in the NSE. The data was gathered exclusively from the secondary data presented in the listed energy and petroleum companies at the NSE and from the companies' websites. The study used five independent variables including: size of the firm measured as the natural logarithm of total assets, age of the firm measured as the number of years in business, financial performance measured as the ratio of earnings before interest and taxes (EBIT) to total assets, growth rate measured by the percentage change in total assets, and ownership structure measured as the proportion of capital held by the managers, the government or any other parties likely to significantly influence the financing decision of the company. The findings were as presented below.

4.2 Descriptive Statistics

The data collection tool, shown in appendix II, was used to collect the required data. The data collected was used to compute company size, company age, financial performance, growth rate, ownership structure and total leverage per company per year. The summarized computation of variables is illustrated in appendix III.

4.2.1 Size of the Firm

The study computed the size of the firm as the natural logarithm of total assets. The study applied Microsoft Excel software in the computation of the natural logarithms of total assets. For KPLC, the size was 10.15 in the year 2000 then it grew throughout the study period to 11.35 by 2010. For KENGEN, the size was 10.81 in the year 2000 which grew steadily until 2005 to 11.26 before slowing down to 11.08 in 2006. In 2007 onwards to the end of the study period in 2010, the size of the firm grew upwards to close at 11.92 in the year 2010. For KenolKobil, the size of the firm was 7.63 in the year 2000 and grew upwards throughout the study period to close at 10.32 in 2010. For Total Kenya, the firm size started at 9.22 in the year 2000 then reduced to a low of 8.72 before starting an upward trend to close at 10.32 in 2010. These findings are well illustrated in the figure 4.3 below and appendix III.

Figure 4.1: Size of the Firm
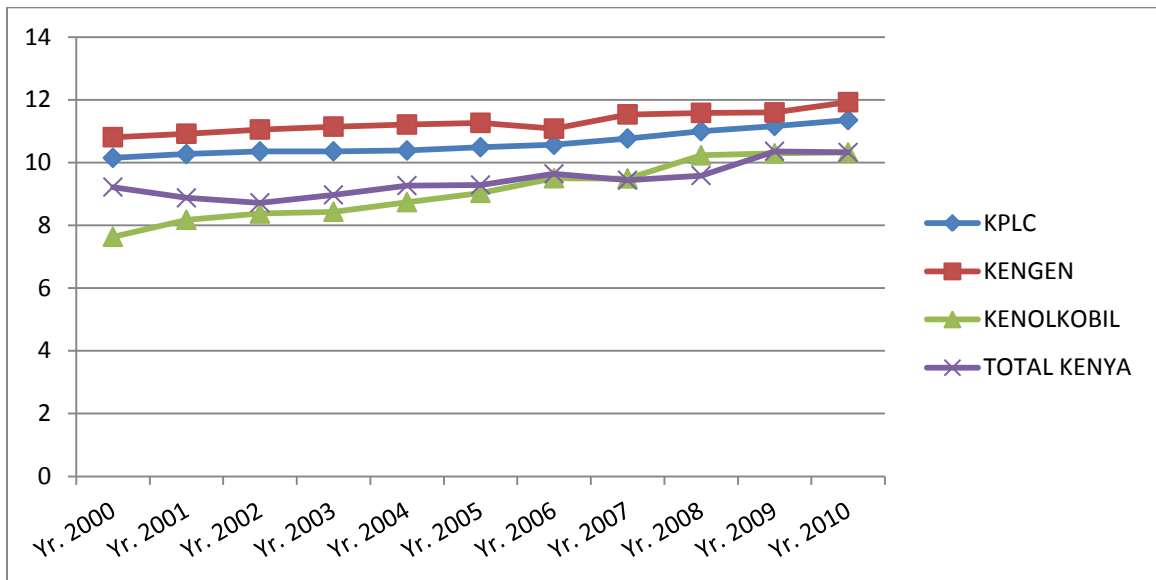
Source: (Research Data, 2012)

4.2.2 Age of the Firm

On the age of the firm, the study measured the length of time the companies had been in operation since their establishment. From the research findings, the study established that KPLC had been in operations for 88 years followed by KENGEN at 56 years, Total Kenya at 55 Years and finally KenolKobil at 51 years. These statistics confirm that these companies had been in business in Kenya for a long time which indicates that they have mastered the way of doing business in this environment. These findings are well illustrated in the figure 4.2 below as well as in appendix III.

Figure 4.2: Number of years in Business for the Companies
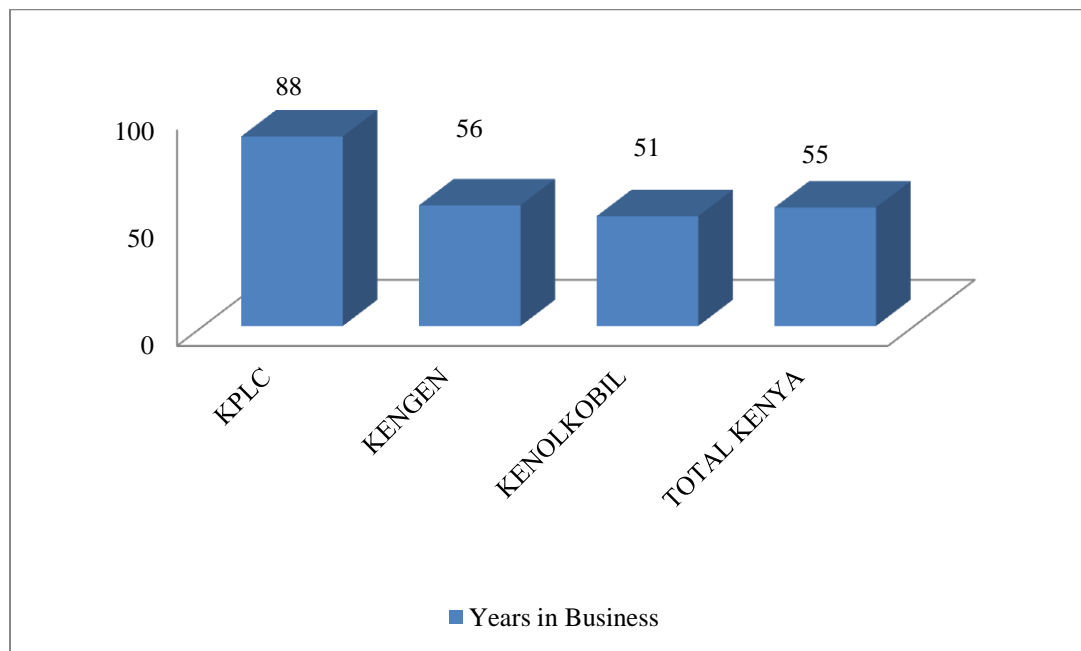
Source: (Research Data, 2012)

4.2.3 Financial Performance

Using the data collected, financial performance was measured as the ratio of earnings before interest and taxes (EBIT) to total assets. The financial performance for KPLC in

the year 2000 stood at -15% which gained 2% points to stand at -13% in 2001. In 2002, 2003 and 2004 KPLC registered financial performance of -8%, -9% and 2% respectively. From 2005 onwards, the financial performance maintained a positive figure although the growth was somehow slowed being 5%, 6%, 5% and 6% for the period 2005 to 2008 respectively. In 2009 and 2010, the growth rate was 8% and 7% respectively. KENGEN's financial performance started at a high of 10% in 2000 which dropped to 4% in 2001 before increasing to 6% in 2002 and 2003. The financial performance registered in 2004 onwards was 5%, 4%, 6%, 4%, 4%, 5% and 2% for the period 2004 to 2010 respectively. The financial performance for KenolKobil was 14% in the year 2000 and grew to a high of 19% for two consecutive years, 2005 and 2006, before dropping to 12% by 2010. For Total Kenya, the financial performance stood at 7% in the year 2000 then fluctuated up and down during the study period to record 8% by 2010. These findings are well illustrated in the figure 4.3 below and appendix III.

Figure 4.3: Financial Performance of the Firms
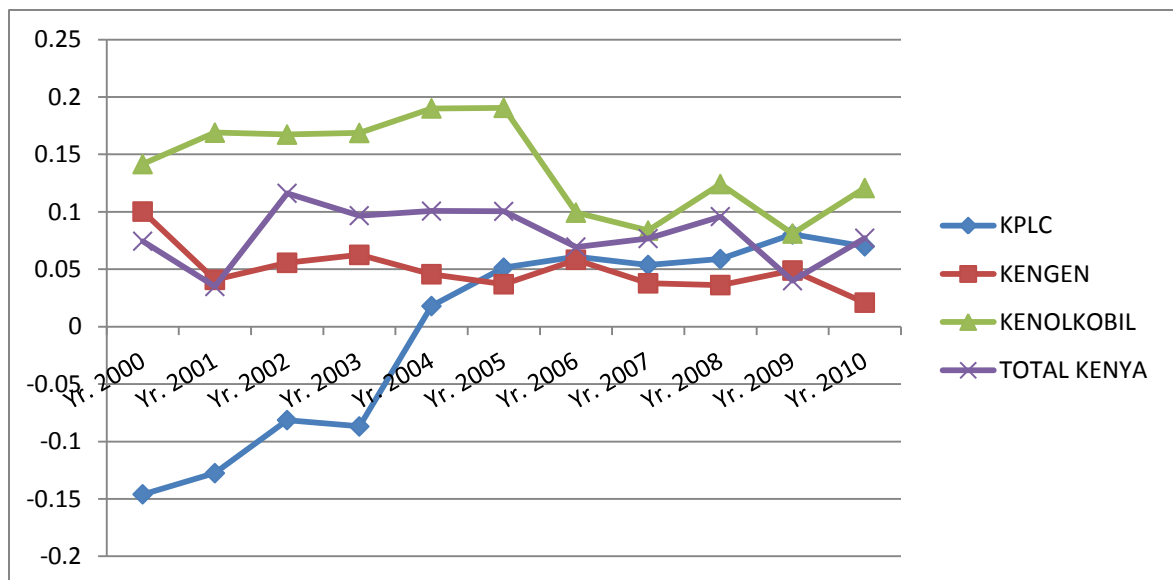
Source: (Research Data, 2012)

4.2.4 Growth Rate

The study computed growth rate as measured by the percentage change in total assets over the period under study. KPLC growth rate stood at 13% in 2001 using the 2000 performance as the base year. Thereafter, the growth rate fluctuated up and down to reach 20% by the year 2010. For KENGEN, the growth rate was 12% in the year 2001 which reduced continuously to reach a low of -17% before adding on to close at 3% in the year 2010. The growth rate for KenolKobil was 72% in the year 2001 after which it reduced to reach a low of -1% in the year 2007 before picking up a positive growth rate to the highest of 109% in 2008 then slowing down to close at 3% in the year 2010. For Total Kenya, it had a negative growth rate of -29% in the year 2001. However, the growth rate improved continuously to 43% in 2006 before dropping to -18% in the year 2007 after which it grew to get to the highest ever of 117% in 2009 before dropping to -4% in the year 2010. These findings are well illustrated in the figure 4.4 and appendix III.

Figure 4.4: Growth Rate of the Firms

Source: (Research Data, 2012)

44
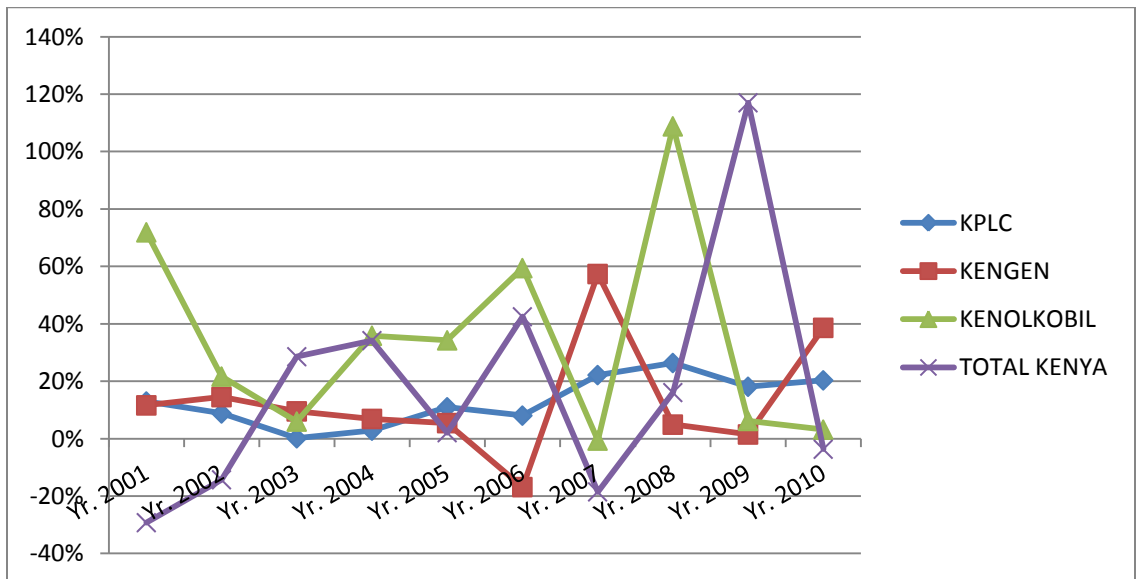
4.2.5 Ownership Structure

The companies' ownership structure was computed as the proportion of capital held by the mangers of the companies, staff of the companies and the government. These three parties were chosen since they greatly influence the financing decision of the companies. As shown in table 4.1, KPLC had an ownership structure of 0.0055 for the years 2001 to 2010 being shares owned by its staff through the company's pension scheme. The year 2000 has zero ownership structure because the scheme had not been started then. For KENGEN, the ownership structure was constant at 0.7 for all the years due to the 70% government stake in the company. The financing decision is therefore expected to be influenced by the government than managers or other staff of the company. KenolKobil has a well defined employee share ownership plan (ESOP) and its ownership structure was highest in 2005 at 0.0177 and lowest at zero before the share ownership plan was started. Total ownership structure was defined by Class A shares which were owned by employees of the company. Its ownership structure was highest at 0.0042 in 2001 and lowest in 2010 at zero. This is shown in table 4.1 and appendix III.

Table 4.1: Companies' Ownership Structure

Company/ Year	2000	2001	2002	2003	2004	2005
KPLC	0.0000	0.0055	0.0055	0.0055	0.0055	0.0055
KENGEN	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000
KENOLKOBIL	0.0000	0.0000	0.0000	0.0088	0.0141	0.0177
TOTAL KENYA	0.0037	0.0042	0.0029	0.0024	0.0022	0.0022
Company/ Year	2006	2007	2008	2009	2010	
KPLC	0.0055	0.0055	0.0055	0.0055	0.0055	
KENGEN	0.7000	0.7000	0.7000	0.7000	0.7000	
KENOLKOBIL	0.0073	0.0134	0.0047	0.0014	0.0090	
TOTAL KENYA	0.0021	0.0021	0.0020	0.0011	0.0000	

4.2.6 Total Leverage

The study also, using the collected data, computed the total leverage as the ratio of total interest-bearing debt to capital. In this computation, market values of equity were used and not book values provided in the companies balance sheets. The market value was arrived at by multiplying the number of shares issued and outstanding as at the end of the financial year by the price of the shares at the time. Total leverage was applied as the dependent variable in the study which was regressed with the other five variables discussed above. From the computations, KPLC's total leverage was 0.24 in the year 2000 then grew to 0.91 in 2002 before slowing down to a low of 0.19 in the year 2006 and then closed the study period with 0.48 in the year 2010. The total leverage for KPLC increased tremendously in the year 2002 following a sharp decline in the share price at the close of the financial year 2002. For KENGEN, the total leverage was 0.59 in the year 2000 which fluctuated up and down during the study period to hit a low of 0.18 in the financial year 2006 and a high of 0.62 in the financial year 2010. KenolKobil had the lowest total leverage of 0.11 in the financial year 2000 which fluctuated up and down and closed the study period at 0.48 in 2010. As for Total Kenya, the total leverage was 0.60 in the financial year 2000 but dropped to a low of 0.16 in the financial year 2003. It then started growing upwards to a high of 0.73 in 2009 then closed the study period at 0.66 in the financial year 2010. These findings are well illustrated in the figure 4.5 below and appendix III.

Figure 4.5: Total Leverage
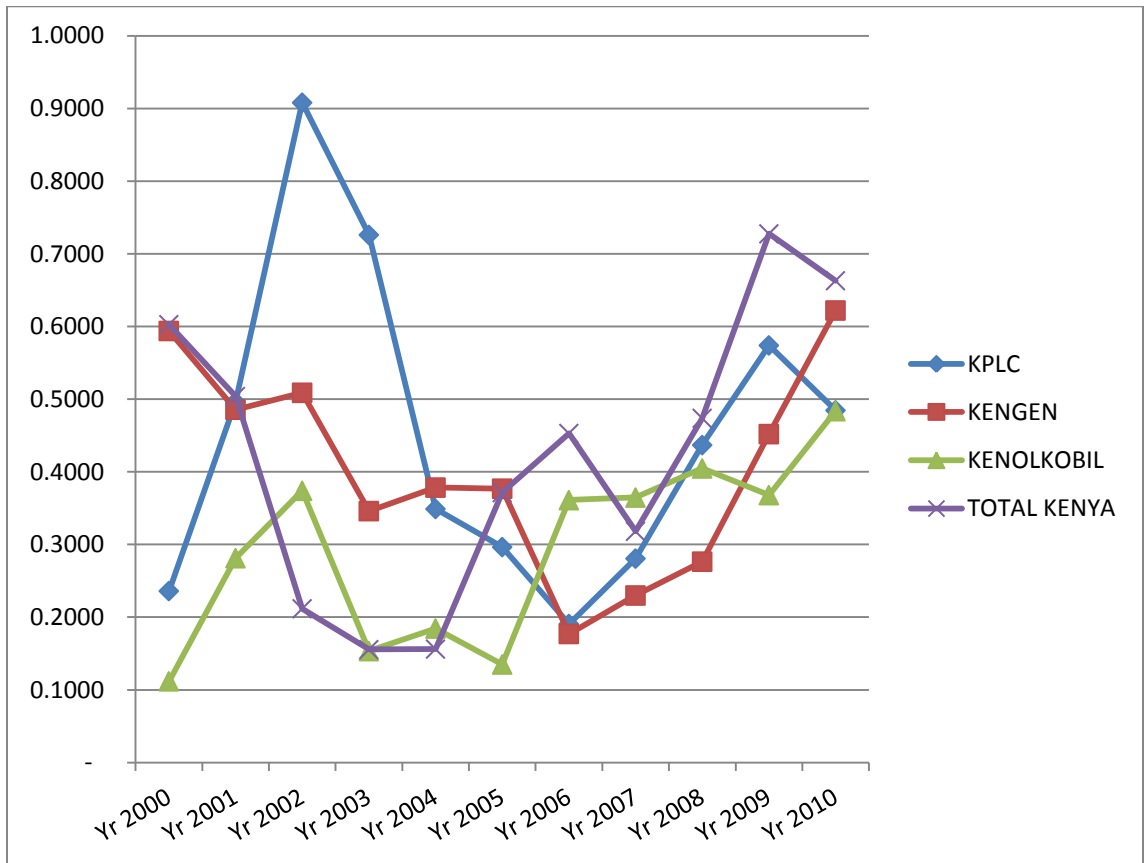
Source: (Research Data, 2012)

4.2.7 Combined Variables

The means of the variables for the four companies were computed per year as shown in appendix IV. The averages of the variables for the four companies were computed for each year to arrive at a single value for each variable each year which in this study is considered the variable for the sector of study. Table 4.2 below provides summary statistics of mean, standard deviation, minimum, maximum, skewness and kurtosis for the dependent and the five independent variables. As shown on the table, total leverage, size, growth rate and ownership structure have skewness greater than zero which means

most values are concentrated on the left of the mean, with extreme values to the right. Age has skewness of zero which means the distribution is symmetrical around the mean while financial performance has skewness less than zero meaning that most values are concentrated on the right of the mean, with extreme values to the left. For kurtosis, all the variables have their kurtosis less than 3 which means a flatter than a normal distribution with a wider peak. The probability for extreme values is less than for a normal distribution, and the values are wider spread around the mean.

Table 4.2: Descriptive Statistics for all Variables

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
TL	10	0.2670	0.5634	0.3936	0.1096	0.4120	(1.5410)
S	10	9.5584	10.9789	10.1754	0.5044	0.4200	(1.1550)
A	10	53.5	62.5	58.0	3.0277	-	(1.2)
FP	10	0.0293	0.0948	0.0686	0.0180	(0.8250)	1.9820
GR	10	0.0768	0.3906	0.1966	0.1033	1.0880	0.2090
OS	10	0.1770	0.1813	0.1788	0.0015	0.3830	(1.1220)

4.3 Regression Analysis Results

The researcher sought to establish the influence of capital structure determinants on the capital structure of the four energy and petroleum companies listed in the NSE. The researcher applied the statistical package for social sciences (SPSS Version 21.0) in the computation of the measurements of the multiple regressions for the study. Table 4.3 shows the regression model summary.

Table 4.3 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.984[a]	0.968	0.929	0.0292424
a. Predictors: (Constant), Ownership Structure (OS), Growth Rate (GR), Financial Performance (FP), Size of the Firm (S), Age of the Firm (A)			

The coefficient of determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (total leverage) that is explained by all the five independent variables (age of the firm, size of the firm, financial performance, growth rate and ownership structure). As shown in table 4.3 above, the five independent variables that were studied explain 92.9% of the capital structure determinants of the four energy and petroleum companies listed in the NSE as represented by the adjusted R^2. This therefore means that there are other factors that influence the total leverage of the firms.

Table 4.4: The Regression Results

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	sig.
(Constant)	6.632	2.247		2.952	0.042
S	0.823	0.206	3.786	4.002	0.016
A	-0.116	0.034	-3.206	-3.387	0.028
FP	1.037	0.812	0.170	1.276	0.271
GR	-0.599	0.127	-0.564	-4.729	0.009
OS	-43.800	12.145	-0.601	-3.606	0.023
a. Dependent Variable: Total Leverage (TL)					

In order to determine the impact of capital structure determinants of the four energy and petroleum companies listed in the NSE, the researcher conducted a multiple regression analysis. As per the SPSS generated table 4.4 above, the equation ($TL = \beta_0 + \beta_1 S + \beta_2 A + \beta_3 FP + \beta_4 GR + \beta_5 OS + \varepsilon$) becomes:

$$TL = 6.632 + 0.823S - 0.116A + 1.037FP - 0.599GR - 43.8OS + \varepsilon$$

Where; TL is the dependent variable (total leverage), S is the size of the firm variable, A is age of the firm variable, FP is financial performance, GR is growth rate and OS is the ownership structure of the firm.

From the coefficients of determination and the except shown in the model above, if all other variables are held at a constant zero, the total leverage of the four energy and petroleum companies listed in the NSE would be 6.632. However, a unit change in the size of the firm results into a 0.823 change in the total leverage of the four energy and petroleum companies listed in the NSE. This shows that size has a positive and significant impact on total leverage. The impact of age of the company on total leverage is negative and is also significant. A unit change in the age of the firm results in a -0.116 change in the total leverage of the four energy and petroleum companies listed in the NSE. Financial performance has a positive but insignificant impact on total leverage. As shown in the table 4.4, a unit increase in the financial performance leads to a +1.037 change in total leverage of the companies. A unit change in growth rate leads to a -0.599 change in total leverage of the four energy and petroleum companies listed in the NSE. Growth rate has a negative and significant impact on total leverage. And finally, a unit change in the ownership structure leads to a -43.8 change in total leverage of the four

energy and petroleum companies listed in the NSE. As shown on the table above, ownership structure has a negative and significant impact on total leverage.

T-test was used to determine whether there was a linear relationship between the dependent variable and each independent variable in isolation. A paired sample T-test was run as shown on table 4.5 below.

Table 4.5: Paired Samples T-Test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
| | | | | 95% Confidence Interval of the Difference | | | | |
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
TL - S	-9.7818	0.4711	0.1490	-10.1188	-9.4448	-65.657	9	0.000
TL - A	-57.6065	2.9990	0.9484	-59.7518	-55.4611	-60.742	9	0.000
TL - FP	0.3250	0.1179	0.2481	0.2406	0.4093	8.716	9	0.000
TL - GR	0.1970	0.1423	0.2576	0.0952	0.2988	4.377	9	0.002
TL - OS	0.2147	0.1108	0.2470	0.1355	0.2940	6.130	9	0.000

As shown in the table above, the p-values for all the five pairs are less than 0.05 ($p<0.05$). There is therefore enough evidence to reject the null hypothesis that, there is no linear relationship between the dependent variable and each independent variable; and accept the alternative hypothesis that, there is a linear relationship between the dependent variable and each of the independent variables size, age, financial performance, growth rate and ownership structure.

4.4 Findings and Interpretation

The hypothesis of the study was that there is a linear relationship between the dependent variable and the independent variables. From the regression results the size of the company has a positive and significant impact on total leverage. The findings agree with the study by Kinyua, (2005) which found company size a key determinant of capital structure, and it is also consistent with the study by Keshar, (2004) which found out that size is statistically significant in determination of capital structure. The finding is also consistent with Philippe et al, (2003) who found out that the size of companies is positively related to leverage, and the study findings also agree with Titman and Wessels (1988) study that confirmed a positive relationship between the size of the firm and its leverage and argued that the larger companies are more diversified and have lower variance of their earnings, making them able to tolerate high debt ratios. The findings are however inconsistent with the pecking order theory which states that there is a negative relationship between the size of the firm and its leverage, because larger companies are more closely observed and are more able to issue equity. The finding also disagrees with Rajan and Zingales (1995) who argued that the larger companies should have lower debt because of less asymmetric information. The study is also inconsistent with the study by Kuria, (2010) which found out that size has an insignificant influence on capital structure.

On the age of the company, the study found out that age of the company has a negative and significant impact on total leverage. This agrees with the pecking order theory which suggests a strong negative relationship between life stage and capital structure (Frielinghaus et al 2005). The findings are also consistent with Ellili and Farouk (2011)

who found out that age of a firm negatively affects the long term leverage of the firm. The negative relation is however inconsistent with Hovakimian, et al (2001) who suggested that 'firms should use relatively more debt to finance assets in place and relatively more equity to finance growth opportunities', and should, therefore, use progressively more debt in their financing mix as they mature. The findings are also inconsistent with the study by Damodaran (2001) who proposed that expanding and high-growth firms would finance themselves primarily with equity, while mature firms would replace equity with debt. It is also inconsistent with Frielinghaus et al, (2005), who found out that firms in infancy and growth stages have a high business risk and cannot afford financial risk, while firms in prime and stable stages can afford the extra risk that accompanies debt financing.

As for financial performance, the study found out that there is a positive and not significant impact on total leverage. These findings are inconsistent with findings by Kuria (2010) who concluded that profitability is a strong determinant of capital structure, Kinyua, (2005) who found out that profitability is a key determinant of capital structure, and Odinga, (2003) who found out that profitability is a significant determinant of a company's capital structure. The findings agree with the argument that it is generally expected that more profitable companies are more able in tolerating high level of debt since they may be in a good position to meet their obligations easily and on time and can therefore easily add more debt in their capital structure (Peterson and Rajan, 1994). The findings are consistent with findings by Munene, (2006) which established that profitability on its own does not exclusively account for variability in capital structure but

conflict with Philippe et al, (2003) who found out that profitability is negatively associated with leverage. It also conflicts with Fama and French (1988) findings which concluded that more profitable firms tend to have lower levels of debt, and also with Allen (1993) who also found that leverage is inversely related to profitability. The findings also disagree with Myers and Majluf (1984) who argue that the companies have a pecking order in the choice of financing their activities and the relationship between leverage and profitability is negative since the internal funds are more preferred than debt. The findings also conflict with findings by Ellili and Farouk (2011) that found out that profitability is negatively correlated to the long term leverage; and findings by Arimi, (2010) that found out there exists a negative relationship between debt-equity ratio and return on equity. Kamau, (2010) findings that found out that there was a weak relationship between financial performance and capital structure, agree with the findings of this study. The findings however partially support findings by Ondiek, (2010) that profitability of a company is an important determinant of capital structure.

The study found out that the growth rate of a company has a negative and significant impact on total leverage. The findings are consistent with findings by Keshar, (2004) who found growth rate to be a statistically significant determinant of capital structure. The findings however seem to partially conflict with the findings by Ellili and Farouk (2011) who found out that the expected growth of a company has a positive impact on the long term leverage and a negative impact on the short term leverage. The findings disagree with findings by Kuria, (2010) that growth is not a very important determinant of capital structure. The findings do not support the pecking order theory that, the relationship

between the growth and the leverage is positive since higher growth opportunities imply a higher demand of fund through the preferred source of debt. The findings however support Myers (1977) argument that due to the agency problems, companies investing in assets that may generate high growth opportunities in the future face difficulties in borrowing against such assets, suggesting that there is a negative relationship between the expected growth and the leverage of the firm.

The regression analysis revealed that ownership structure has a negative and significant impact on total leverage. This is inconsistent with Leland and Pyle (1977) who argued that the higher the managerial ownership in the capital of the company, the larger is the debt capacity. The findings are also inconsistent with findings by Matibe, (2005) who found out that state-owned firms have a greater appetite for debt than those owned by individuals and other investors, which may also mean that state-owned firms have more access to debt than the individual owned and other investor owned firms. The findings also conflict with the findings by Harris and Raviv (1988) who affirmed that the managers increase the debt ratio in order to reinforce their control, and also conflict with findings by Zingales et al (1995) and Zwiebel (1996) who argued that threat of takeover forces the managers to issue debts and to prove their alignment. The findings are consistent with those of Amihud and Lev (1981) who affirmed that the managers having a non diversifiable human capital are more interested in minimizing their risk of employment through the viability of the companies by reducing the debts, Berger, Ofeck and Yermack (1997) who found out that the entrenched managers avoid debt and that for a low level of managerial ownership, the interests of the managers are aligned on those of

the shareholders leading to a high level of debts and for a high level of managerial ownership, the level of debt is low. The findings also agree with the findings of Friend and Hasbrouck (1988) who argued that the more wealth a managerial insider has invested in the employer, the greater the incentive they have to minimize the use of debt financing, and those of Noe and Rebello (1996) who argued that the locus of control within a firm is an important determinant of choice of finance since corporate decisions are dictated by the manager and equity issues will be favored over debt because of the managers' inclination to protect their undiversified human capital and to avoid the performance pressure associated with debt commitments (Berger et al., 1997).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

The study found out that company age, growth rate of the company and ownership structure have a negative impact on total leverage of the company. The study also found out that the size of a company and its financial performance have a positive impact on total leverage. However, while size, age, growth rate and ownership structure have a significant impact on total leverage, financial performance has an insignificant impact on total leverage. The study therefore found out that the key determinants of capital structure are: size of the company, age of the company, its growth rate and ownership structure. As per the findings, financial performance of the company is not a key determinant of capital structure.

5.2 Conclusion and Recommendations

This paper provides empirical evidence on the determinants of capital structure of the energy and petroleum companies quoted at the NSE. This was done by testing five expected determinants of total leverage using data of the energy and petroleum companies traded on NSE. Overall, the companies exhibit different financing behavior from each other. The size of the company was found to have a positive relationship to the total leverage. This finding therefore shows that, although larger companies are more closely observed, they may not necessarily be more able to issue equity than small companies. The relationship between size and total leverage was found to be significant and size is therefore key in determining the capital structure.

The study found age of the company to be negatively related with total leverage and the relationship is significant. The strong negative relationship may imply that, although firms in infancy and growth stages have a high business risk, they can still afford financial risk, while firms in prime and stable stages, though they can afford the extra risk that accompanies debt financing, may prefer financing from internal sources or external equity. It may also imply that mature firms have access to debt due to their being well established over time. Mature firms therefore use more debt than equity.

The study also found out that there is a weak positive relationship between financial performance and total leverage. This show that profitable companies are more able in tolerating high level of debt since they may be in a good position to meet their obligations easily and on time and can therefore easily add more debt in their capital structure. Highly performing companies also have ease of access to debt since lenders have confidence in them.

The growth rate of a company has a negative and significant impact on total leverage. The main reason for this may be due the fact that companies investing in assets that may generate high growth opportunities in the future face difficulties in borrowing against such assets, suggesting that there is a negative relationship between the expected growth and the leverage of the firm.

On ownership structure, the study also found out that there exists a strong negative relationship between ownership structure and total leverage. This implies that the

managers having a non diversifiable human capital are more interested in minimizing their risk of employment through the viability of the companies by reducing the debts as postulated by Berger, Ofeck and Yermack (1997). This means that the entrenched managers avoid debt and that for a low level of managerial ownership, the interests of the managers are aligned on those of the shareholders leading to a high level of debts and for a high level of managerial ownership, the level of debt is low.

The results of this study have delivered some insight on the capital structure of the energy and petroleum companies quoted at the NSE since capital structure choice is an important financing decision that the companies have to make. The study also contributes to the literature on the relationship between size, age, financial performance, growth rate and ownership structure and the total leverage of the companies. In developing their financial policies, company managers should take into account the size of the company, its age, growth rate and ownership structure to ensure that optimal decisions are made to maximize the value of the firm. This is because these are key determinants of capital structure for their companies.

5.3 Limitations

The study aimed at computing all the variables for the ten years starting from 2000 as a base year to 2010. Not all the companies under study had a defined employee share ownership plan (ESOP) or showed shares owned by employees and managers in their financial statements and where it was provided, it was difficult to break it down into managers' and junior employees' shares. The study therefore assumed that all these

shares belonged to senior employees who can influence financing decisions in their respective companies.

Also, not all the companies were quoted during the period covered by the study. One of the companies was quoted in 2006 which therefore meant that market data for the period 2001 to 2005 was not available, and for this period, book values of equity were used. The ideal should have been to use market values for all companies for all years.

5.4 Suggestions for Further Research

The same research could also be undertaken but include all companies; quoted and unquoted in the energy and petroleum sector. This is because this study only considered quoted companies and a study of both quoted and unquoted companies could give more insights into the determinants of capital structure in the energy and petroleum sector.

Research could also be done in the same sector but, apart from the five determinants considered in this study, other factors be included in the model. For example, the independent variables could be size, age, financial performance, growth rate, ownership structure, risk, asset structure, taxation and other factors. This is because this study showed that the five factors studied could only explain 92.9% of capital structure, meaning other factors may be in play.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

UNIVERSITY OF NAIROBI

SCHOOL OF BUSINESS

MBA PROGRAMME

Telephone: 020-2059162
Telegrams: "Varsity", Nairobi
Telex: 22095 Varsity

P.O. Box 30197
Nairobi, Kenya

DATE 27/7/2012

TO WHOM IT MAY CONCERN

The bearer of this letter TURERE SIMON PATITA

Registration No. D61/63141/2011

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

IMMACULATE OMANO
MBA ADMINISTRATOR
MBA OFFICE, AMBANK HOUSE

APPENDIX II: DATA COLLECTION TOOL

YEAR	COMPANY NAME								
	STARTED IN YEAR:								
	Number of Years in Business	Total Assets	Change in Total Assets	EBIT	Capital Held by Manager(s)	Total Interest Bearing Debt	Total Equity	Ord Share Price at Period End	No. of Shares Issued
		Kshs. 'Millions'	Kshs. 'Millions'	Kshs. 'Millions'	Kshs. 'Millions'	Kshs. 'Millions'	Kshs. 'Millions'	Kshs.	No. 'Millions'
2000									
2001									
2002									
2003									
2004									
2005									
2006									
2007									
2008									
2009									
2010									

APPENDIX III: SUMMARY OF COMPUTED VARIABLES

YEAR	Total Leverage (TL)					Size of the Firm (S)					Age of the Firm (A)				
	KPLC	KENGEN	KENOLK OBIL	TOTAL KENYA	MEAN	KPLC	KENGEN	KENOLK OBIL	TOTAL KENYA	MEAN	KPLC	KENGEN	KENOLK OBIL	TOTAL KENYA	MEAN
2000	0.2360	0.5939	0.1118	0.6027	0.3861	10.1465	10.8064	7.6348	9.2176	9.4513	78.00	46.00	41.00	45.00	52.50
2001	0.4965	0.4857	0.2813	0.5039	0.4418	10.2685	10.9165	8.1767	8.8721	9.5584	79.00	47.00	42.00	46.00	53.50
2002	0.9080	0.5089	0.3740	0.2117	0.5007	10.3531	11.0520	8.3729	8.7180	9.6240	80.00	48.00	43.00	47.00	54.50
2003	0.7261	0.3461	0.1534	0.1555	0.3453	10.3548	11.1432	8.4312	8.9695	9.7247	81.00	49.00	44.00	48.00	55.50
2004	0.3490	0.3784	0.1845	0.1562	0.2670	10.3827	11.2100	8.7379	9.2638	9.8986	82.00	50.00	45.00	49.00	56.50
2005	0.2966	0.3769	0.1351	0.3714	0.2950	10.4867	11.2632	9.0328	9.2848	10.0169	83.00	51.00	46.00	50.00	57.50
2006	0.1907	0.1770	0.3611	0.4530	0.2955	10.5643	11.0788	9.4993	9.6391	10.1954	84.00	52.00	47.00	51.00	58.50
2007	0.2807	0.2299	0.3647	0.3182	0.2984	10.7647	11.5324	9.4932	9.4345	10.3062	85.00	53.00	48.00	52.00	59.50
2008	0.4369	0.2765	0.4047	0.4738	0.3980	10.9990	11.5805	10.2295	9.5838	10.5982	86.00	54.00	49.00	53.00	60.50
2009	0.5740	0.4520	0.3681	0.7276	0.5304	11.1655	11.5955	10.2899	10.3586	10.8524	87.00	55.00	50.00	54.00	61.50
2010	0.4846	0.6221	0.4836	0.6631	0.5634	11.3507	11.9222	10.3213	10.3214	10.9789	88.00	56.00	51.00	55.00	62.50

YEAR	Financial Performance (FP)					Growth Rate (GR)					Ownership Structure (OS)				
	KPLC	KENGEN	KENOLK OBIL	TOTAL KENYA	MEAN	KPLC	KENGEN	KENOLK OBIL	TOTAL KENYA	MEAN	KPLC	KENGEN	KENOLK OBIL	TOTAL KENYA	MEAN
2000	(0.1460)	0.1003	0.1416	0.0745	0.0426	-	-	-	-	-	-	0.7000	-	0.0037	0.1759
2001	(0.1276)	0.0408	0.1690	0.0349	0.0293	0.1298	0.1164	0.7192	(0.2922)	0.1683	0.0055	0.7000	-	0.0042	0.1774
2002	(0.0813)	0.0556	0.1673	0.1162	0.0644	0.0882	0.1451	0.2168	(0.1428)	0.0768	0.0055	0.7000	-	0.0029	0.1771
2003	(0.0869)	0.0625	0.1687	0.0967	0.0603	0.0017	0.0955	0.0601	0.2860	0.1108	0.0055	0.7000	0.0088	0.0024	0.1792
2004	0.0180	0.0457	0.1901	0.1007	0.0886	0.0283	0.0691	0.3590	0.3421	0.1996	0.0055	0.7000	0.0141	0.0022	0.1805
2005	0.0514	0.0370	0.1906	0.1004	0.0948	0.1097	0.0546	0.3429	0.0212	0.1321	0.0055	0.7000	0.0177	0.0022	0.1813
2006	0.0609	0.0583	0.0993	0.0694	0.0720	0.0807	(0.1683)	0.5945	0.4251	0.2330	0.0055	0.7000	0.0073	0.0021	0.1787
2007	0.0538	0.0378	0.0837	0.0767	0.0630	0.2219	0.5739	(0.0061)	(0.1850)	0.1512	0.0055	0.7000	0.0134	0.0021	0.1803
2008	0.0589	0.0362	0.1242	0.0959	0.0788	0.2639	0.0493	1.0883	0.1610	0.3906	0.0055	0.7000	0.0047	0.0020	0.1780
2009	0.0803	0.0489	0.0811	0.0400	0.0626	0.1812	0.0150	0.0623	1.1703	0.3572	0.0055	0.7000	0.0014	0.0011	0.1770
2010	0.0700	0.0210	0.1208	0.0771	0.0722	0.2035	0.3864	0.0319	(0.0365)	0.1463	0.0055	0.7000	0.0090	-	0.1786

APPENDIX IV: DESCRIPTIVE STATISTICS FOR ALL VARIABLES

Year	N	Total Lverage				Company Size				Company Age			
		Minimum	Maximum	Mean	Std. Deviation	Minimum	Maximum	Mean	Std. Deviation	Minimum	Maximum	Mean	Std. Deviation
2001	4	0.2813	0.5039	0.4419	0.1073	8.1767	10.9165	9.5585	1.2555	42	79	53.5	17.13671
2002	4	0.2117	0,9080	0.5007	0.2975	8.3729	11.0520	9.6240	1.2854	43	80	54.5	17.13671
2003	4	0.1534	0.7261	0.3453	0.2695	8.4312	11.1432	9.7247	1.2453	44	81	55.5	17.13671
2004	4	0.1562	0.3784	0.2670	0.1129	8.7379	11.2100	9.8986	1.1112	45	82	56.5	17.13671
2005	4	0.1351	0.3769	0.2950	0.1127	9.0328	11.2632	10.0169	1.0454	46	83	57.5	17.13671
2006	4	0.1770	0.4530	0.2955	0.1343	9.4993	11.0788	10.1954	0.7551	47	84	58.5	17.13671
2007	4	0.2299	0.3647	0.2984	0.0571	9.4345	11.5324	10.3062	1.0222	48	85	59.5	17.13671
2008	4	0.2765	0.4738	0.3980	0.0858	9.5838	11.5805	10.5982	0.8738	49	86	60.5	17.13671
2009	4	0.3681	0.7276	0.5304	0.1563	10.2899	11.5955	10.8524	0.6352	50	87	61.5	17.13671
2010	4	0.4836	0.6631	0.5634	0.0930	10.3213	11.9222	10.9789	0.7943	51	88	62.5	17.13671

Year	N	Financial Performance				Growth Rate				Ownership Structure			
		Minimum	Maximum	Mean	Std. Deviation	Minimum	Maximum	Mean	Std. Deviation	Minimum	Maximum	Mean	Std. Deviation
2001	4	-0.1276	0.1690	0.0293	0.1215	-0.2922	0.7192	0.1683	0.4162	0.0000	0.7000	0.1774	0.3484
2002	4	-0.0813	0.1673	0.0645	0.1074	-0.1428	0.2168	0.0768	0.1556	0.0000	0.7000	0.1771	0.3486
2003	4	-0.0869	0.1687	0.0603	0.1076	0.0017	0.2860	0.1108	0.1230	0.0024	0.7000	0.1792	0.3472
2004	4	0.0180	0.1901	0.0886	0.0759	0.0283	0.3590	0.1996	0.1752	0.0022	0.7000	0.1805	0.3464
2005	4	0.0370	0.1906	0.0949	0.0694	0.0212	0.3429	0.1321	0.1452	0.0022	0.7000	0.1814	0.3458
2006	4	0.0583	0.0993	0.0720	0.0188	-0.1683	0.5945	0.2330	0.3425	0.0021	0.7000	0.1787	0.3475
2007	4	0.0378	0.0837	0.0630	0.0211	-0.1850	0.5739	0.1512	0.3273	0.0021	0.7000	0.1803	0.3465
2008	4	0.0362	0.1242	0.0788	0.0390	0.0493	1.0883	0.3906	0.4733	0.0020	0.7000	0.1781	0.3480
2009	4	0.0400	0.0811	0.0626	0.0212	0.0150	1.1703	0.3572	0.5466	0.0011	0.7000	0.1770	0.3487
2010	4	0.0210	0.1208	0.0722	0.0409	-0.0365	0.3864	0.1463	0.1892	0.0000	0.7000	0.1786	0.3476