

**THE RELATIONSHIP BETWEEN FREE CASH FLOWS AND
INVESTMENTS OF FIRMS QUOTED AT THE NAIROBI
SECURITIES EXCHANGE**

BY

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DECLARATION

This research project is my original work and has not been presented in any other examination body. No part of this research project should be produced without my consent or that of the University of Nairobi.

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May the Almighty God bless you all greatly!

DEDICATION

This paper is dedicated to my Mother Mrs Lucy Kinyanjui for her support and encouragement, and to my whole entire family for their support throughout the course. To my nephew Andrew and nieces Nichole and Kimberly I encourage them to work hard in school.

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LIST OF ABBREVIATIONS

ANOVA	-	Analysis of Variance
CMA	-	Capital Markets Authority
DPR	-	Dividend Payout Ratio
FCF	-	Free Cash Flows
IMF	-	International Monetary Fund
MM	-	Modigliani and Miller
NCE	-	Net Capital Expenditure
NPV	-	Net Present Value
NSE	-	Nairobi Securities Exchange
RD	-	Research and Development
SPSS	-	Software Package for Statistical Analysis

ABSTRACT

The aim of this study was to establish the relationship between free cash flow and investments of companies listed at the Nairobi Stock Exchange. Companies engage in various ways to finance their investments, including equity financing (internally generated funds and externally raised funds) and or debt. Free cash flow tempts managers to expand the scope of operations and the size of the firm, these spending is seen as unprofitable especially to the shareholders, who see it worthwhile for the firm to issue dividends instead of retaining the funds to invest. Capital expenditure is strongly and positively associated to the level of free cash flow (the more free cash flows a firm has, the more investments the firm can engage in. The study aimed at determining the relationship between the level of free cash flow and the amount of extra cash that can be committed on investment decisions by companies that are listed at the Nairobi Stock Exchange. Data was obtained from annual statements of listed companies. The study covered a five year period from 2009 to 2013. Multiple linear regression method was used to identify the existence of the relationship. The regression model results point out that FCF have a positive impact on Net Capital Expenditure. From the organizations considered, it was established that there is a positive fairly significant relationship between free cash flows and investment that is as the level of free cash flows increase, the level of investments increases. This study used only three variables as the measures of the relationship between free cash flows and investments, hence there is need to carry out the study with other different factors in order to be able to establish whether there are other major factors that have a relationship with investments at the NSE and in companies not listed at the NSE.

CHAPTER ONE:

INTRODUCTION

1.1 Background Information

The main objective of the firm is to maximize the shareholders wealth. In relation to financial management this objective can be achieved by analyzing the two sides of the statement of financial position. On the assets side, the focus is on adding value to the shareholders wealth by taking advantage of investment opportunities that is projects that generate positive NPVs.

On the liability and capital side, the focus is maximizing value by reducing the cost of financing the investments of the firm. Companies engage in various ways to finance their investments, including equity financing (internally generated funds and externally raised funds) and or debt. Internally generated funds refer to the retained earnings, which in relation to various factors among them stage in the firm's life cycle (which depicts the dividend policy applied) determine whether the retained earnings will be wholly distributed as dividends to shareholders, partly distributed to the shareholders and partly utilized to investment or capital expenditure and or wholly retained to be invested in projects that generate positive NPVs.

External equity financing or new equity unlike internally generated funds, attract a higher cost in raising the funds (flotation costs), thus most firms first use the internal funds to finance firms investments because its much cheaper, this is well explained by Myers, (1984) who states that the pecking order theory maintains that businesses adhere to a hierarchy of fin

ancing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required (equity would mean issuing shares which meant 'bringing external ownership' into the company). This clearly illustrates that the free internal funds can first be used to finance the investment needs of the firm.

It should also be noted that, these internal funds can be prone to abuse by the managers who are the custodians or agents of the shareholders, giving rise to the basic conflict of interest between owners and managers that is the agency theory problem Jensen (1986) adds that free cash flow as a cash in surplus of that necessary to fund all positive net present value projects. Free cash flow

tempts managers to expand the scope of operations and the size of the firm, thus increasing managers' control and personal compensation, by investing free resources in projects that have zero or negative net present values. These spending is seen as unprofitable especially to the shareholders, who see it worthwhile for the firm to issue dividends instead of retaining the funds to invest.

Modigliani and Miller (1958, 1961), hereafter referred to as MM, put forward the irrelevance theorems, more commonly known as the MM theorems and these form the foundation of modern corporate finance theory. The two main conclusions that are drawn from the MM theorems are that firm value is dependent on its current and future free cash flow. Secondly, the level of dividends (or dividend policy) does not affect firm value given that firms maximize their value through investment. Whilst investment increases the value of future cash flows. The difference between equity issued and payouts of the firm is equal to its free cash flow. Hence, dividend policy is irrelevant when it comes to affecting firm value.

Free cash flow has always been a subject of great debate especially in the literature on the determinants of investment.

1.1.1 Free cash flows

Richardson (2006) defines free cash flows as cash flows beyond what is necessary to maintain assets in place and to finance expected new investments.

Subramanyam & John (2009) states that free cash flows also can be defined for the entire firm. Specifically, free cash flows to the firm or simply free cash flows equal operating cash flows (adjusted for interest expense and revenue) less investments in operating assets. They continue to say that free cash flows to the firm reflects the added effects of investments and divestments in operating assets. The appeal of the free cash flows to the firm concept is that it represents cash that is free to be paid to both debt and equity holders.

Vogt (1997) expounds free cash flows as operating income before depreciation, less interest expense on debt, less income taxes, less preferred and common dividends. FCF is a coverage ratio representing the amount to which current period generated free cash flow is sufficient to cover next period's capital expenditures.

Vogt (1997) continues to explain that free cash flow is the amount of cash that a company has left over after it pays all of its expenses, including investments. Negative free cash flow is not inevitably an indication of a bad company, however, since many young companies put a lot of their cash into capital expenditure, which diminishes their free cash flow. Although if a company is spending so much FCF, it should have a good grounds for doing so and it should be earning high rate of return on its investments. While free cash flow doesn't receive as much attention as earnings do, it is considered by some experts to be a better indicator of a company's financial health.

Poulsen (1989) states that free cash flow is a cash flow in hand for giving out among all the securities holders of an organization. They include: equity holders, debt holders, preferred stock holders and convertible security holders.

Jensen (1986) tries to suggest that free cash flow is a cash flow in surplus of that necessary to fund all projects that have positive net present value when discounted at the appropriate cost of capital. When FCF is present and shareholder monitoring is imperfect, the typical manager-shareholder agency problem arises. Managers have a tendency to overinvest (that is, invest in negative-NPV projects) in order to capture the financial and non-financial benefits of increased firm size.

1.1.2 Investment decisions

Investment decision refers to the process of determining which investment projects result in maximization of shareholders value (Hermes et al., 2007). Several techniques have been designed by researchers to aid in the calculation of expected return from promising investment projects these are selected of potential investment. The commonly used technique is the Net Present Value (NPV).

Investment decisions of a firm are generally known as the capital budgeting, or capital expenditure decision. It is defined as the firm's decision to invest its current funds most in the long-term assets in anticipation of an expected flow of benefits over a series of years it includes expansion, acquisition, modernization and replacement of the long-term assets, sale of a division or business (divestment), change in the methods of sales distribution, an advertisement

campaign, research and development programme and employee training, shares (tangible and intangible assets that create value) (Pandey, 2005).

According to Modigliani (1958), investment in perfect capital markets decisions are independent of financing decisions and, hence, investment policy only depends on the availability of investment opportunities with a positive net present value. In the neoclassical model, companies have unlimited access to sources of finance and investment, so firms with opportunities for profitable investment that exceed their available cash flow would not be expected to invest any less than firms with the same opportunities and higher cash flow, because external funds provide a perfect substitute for internal resources.

1.1.3 Effect of free cash flows on investments

Capital expenditure is strongly and positively associated to the level of free cash flow (the more free cash flows a firm has, the more investments the firm can engage in, also according to Vogt (1997) the more a firm has free cash flows, the more the profitable capital expenditure projects the firm can undertake), and free cash flow's influence on capital expenditure increases as firm size decreases, (in that small firms gear towards rampant growth thereby using most or all their free cash flows to invest in value adding projects) and as insider ownership increases.

Firms maximize their value through investment and this therefore is a motivation to the managers who own shares of the company (as a measure to tame the agency problem) to invest in projects that add value to the firm, which has a long-term or future perspective unlike issuing dividends to shareholders which motivates for now but if invested in positive NPV projects can increase the value of the firm and the shareholders wealth.

1.1.4 Nairobi Securities Exchange (NSE)

NSE is a market established in 1953 and licensed by the CMA with the main mandate of regulating the security market and ensuring exchange of ownership of securities by bringing borrowers and investors together at low cost. Regulation of the quoted firms is achieved by ensuring that firms abide by the rules and regulations set by submitting their periodic performance reports. Also, the NSE educates the general public on investment issues. The products traded are securities which consist of shares/equities and bonds/debt investments.

The shares of sixty one companies listed at the NSE trade in the eleven sectors namely: - agriculture, automobiles & accessories, banking, commercial, construction, energy & petroleum, insurance, manufacturing & allied, telecommunication & technology industry, investment and growth enterprise market segment (NSE, 2014).

1.2 Problem Statement

Some observers have pointed out that there exists a relationship between free cash flow and investment. Hovakimian and Hovakimian (2005) observed that there is a positive relationship between internal funds and investment decisions due to the liquidity constraints faced by firms as a result of the gap between the cost of external financing and internal financing. In relation to this, Alti (2003) showed that the relationship between cash flow and investments is stronger in companies that are in growth stage, which is likely to experience financial difficulties because the companies have to make adjustments between the investments made with generated cash flow. Moreover it reflects the company's growth opportunities.

In contrast to the above, Bo Becker (2006) research explains that in frictionless financial markets, investment does not depend on internal cash flows. In a large European data set, the researcher finds that firms invest more on average when they have higher cash flow.

In relation to previous studies, investment and free cash flow are significantly related, though both the strength of the relationship and its cause are the subject of much debate. There still remains disagreement whether free cash flows and investment decisions are related, therefore, this study intends to answer the research question, does the relationship exists between free cash flows and investment made by the companies at the Nairobi Securities Exchange (NSE) in Kenya?

According to Vogt (1997) the more a firm has free cash flows, the more the profitable capital expenditure projects the firm can undertake. Consequently, capital expenditure is met with positive shareholder reactions, particularly when spending is dependent on cash flow, mostly to those who aspire for higher dividend in the future than those who want free cash flows distributed as dividends now. He continues to explain that Negative free cash flow is not inevitably an indication of a bad company, however, since many young companies put a lot of their cash into capital spending, which diminishes their free cash flow. Although if a company is

spending so much FCF, it should have good grounds for doing so and it should be earning high rate of return on its investments. While free cash flow doesn't receive as much attention as earnings do, it is considered by some experts to be a better indicator of a company's financial health.

Vogt (1994) explains FCF assumption that cash flow should influence capital spending. The firms not paying dividends should demonstrate the strongest relationship between cash flow and capital spending, while those paying high dividends should show the weakest relationship. With this it's important to have a look at the relationship between free cash flows and investment of the firms, whether positive or negative, and more so to do this study on publicly listed firms in Kenya.

1.3 Research Objective

To establish the relationship between free cash flows and the investments made by the listed companies at the Nairobi Securities Exchange (NSE).

1.4 Value of the Study

Firms will be able to know whether investment decisions wholly rely on the free cash flows of the firm or not.

The research study will add to the field of knowledge and also the scholars will also benefit from this study in their research process, to either fill the research gaps or contribute in their learning process.

The paper will enable the investors to know the kind of information to be disclosed by firms on the financial statements pertaining to free cash flows and investing decisions.

The conclusions will also bridge the knowledge gap that exists in the Finance field on free cash flows and investing decisions.

It will also bridge the knowledge gap about the correlation between free cash flows and investments made by the companies in the Nairobi Securities Exchange (NSE) in Kenya and add

to the literature on prior studies done on the concepts of free cash flows and investment decisions made by the companies at the Nairobi Securities Exchange (NSE).

CHAPTER TWO:

LITERATURE REVIEW

2.0 Introduction

This chapter examines the literature relevant to the study. It follows the conceptual framework, incorporate scholarly works that is the empirical evidence and theories. The rationale of the study is to ascertain the relationship between free cash flows and investments. The literature under review is obtained from journal articles, text books and websites.

2.1 Theoretical Review

2.1.1 Dividend policy related theories

The initial theory relating to Dividend policy was developed in 1958 by economists Franco Modigliani and Merton Miller known as MM Theory. The Modigliani and Miller (1961) and Miller (1977) result that firm value is independent of dividend policy has also been examined extensively. Bhattacharya (1979) and others show that firm dividend policy can be a costly device to signal a firm's state, and hence relevant, in a class of models, firstly, asymmetric information about stochastic firm earnings, secondly, shareholder liquidity (a need to sell makes firm valuation relevant), and thirdly deadweight costs (to pay dividends, refinance cash flow shocks or cover under-investment). In a separating equilibrium, only firms with high anticipated earning pay high dividends, thus signaling their prospects to the stock market. As in other costly signaling models, why a firm would use financial decisions to reveal information, rather than direct disclosure, must be addressed. As previously, taxes are another important friction which affects dividend policy

Modigliani and Miller (1958, 1961), hereafter referred to as MM, put forward the irrelevance theorems, more commonly known as the MM theorems and these form the foundation of modern corporate finance theory. The two main conclusions that are drawn from the MM theorems are that firm value is dependent on its current and future free cash flow. Secondly, the level of dividends (or dividend policy) does not affect firm value given that firms maximize their value through investment. Whilst investment increases the value of future cash flows. The difference

between equity issued and payouts of the firm is equal to its free cash flow. Hence, dividend policy is irrelevant when it comes to affecting firm value.

Regarding the impact of dividend policy decision on investment, it is understood that firms should take all projects with a positive Net Present Value (NPV). However, the issue is that if management put more emphasis on dividend policy to such an extent that it eventually dominates investment policy decisions, it could be argued that NPV projects or projects creating firm value be cancelled or delayed for a later time. By cancelling or delaying positive NPV projects, this will obviously have an adverse effect on the future expected profits of the company. Although Fama (1974) carried out a research on the relationship between investment decisions and dividend decisions. His findings revealed that investment decisions and dividend decisions are not correlated; that these two types of decision making do not affect each other.

2.1.2 Pecking order theory

Pecking Order theory popularized by Myers (1984) tries to capture the costs of asymmetric information. It states that companies prioritize their sources of financing (from internal financing to equity) according to the law of least effort, or of least resistance, preferring to raise equity as a financing means “of last resort”. Hence, internal financing is used first; when that is depleted, then debt is issued; and when it is no longer sensible to issue any more debt, equity is issued. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required (equity would mean issuing shares which meant 'bringing external ownership' into the company). This clearly illustrates that the free internal funds can first be used to finance the investment needs of the firm.

2.1.3 Agency Costs Based Theory

This is a kind of conflict that comes about when the owners of the business are separated from the control of the business. Managers of firms may diverge from the goal of the owners which is the maximization of the firm value. Instead, managers may choose to behave in way that will satisfy their interest. This can be in the form of luxuriant office and cars, expensive travels, extravagant benefits etc. (Jensen and Meckling, (1976))

The way to mitigate the chances of this kind of behavior from managers is by giving and or increasing the ownership of managers in the firm they manage. Additionally, increasing the debt level also helps to mitigate the loss of conflicts between owners/shareholders and managers. Since debt forces managers to pay out cash, reducing the free cash. If the manager has ownership in the firm, it puts her/him in a position of unwillingness to loosely spend the firm's money. With this step (s)he will recognize and beware that the firm money (partly his money) should be carefully managed. Free cash flow managers can waste on the perquisites. (Jensen and Meckling, 1979; Niu, 2008) From other perspectives, this conflict arises because managers may prefer short-term projects, which produce results early and enhance their reputation quickly, rather than more profitable long-term projects. Managers may prefer less risky investments and lower leverage to reduce the probability of bankruptcy.

Jensen (1986) adds that free cash flow as a cash in surplus of that necessary to fund all positive net present value projects. Free cash flow tempts managers to expand the scope of operations and the size of the firm, thus increasing managers' control and personal compensation, by investing free resources in projects that have zero or negative net present values. These spending is seen as unprofitable especially to the shareholders, therefore, an aspect of the basic conflict of interest between owners and managers that is the agency theory problem. To mitigate this conflict the manager should have ownership in the firm, it puts her/him in a position of unwillingness to loosely spend the firm's money. With this step (s)he will recognize and beware that the firm money (partly his money) should be carefully managed, therefore will invest this free cash flows in projects with positive NPVs.

2.2 Determinants of investments of listed firms

The most important determinant of capital expenditure is cash flow. Capital expenditure is strongly and positively associated to the level of free cash flow (the more free cash flows a firm has, the more investments the firm can engage in, also according to Vogt 1997 the more a firm has free cash flows, the more the profitable capital expenditure projects the firm can undertake), and free cash flow's influence on capital expenditure increases as firm size decreases, in that small firms gear towards rampant growth thereby using most or all their free cash flows to invest in value adding projects.

In the IMF working paper Geng and N'diaye (2012), the empirical analysis of the determinants of investment indicates that financial variables such as interest rates and the exchange rate are important determinants of corporate investment, others include: capital stock and dividend policy or retention policy (not included in the paper).

2.2.1 Real interest rates

Rittenberg and Tregarthen (2014) state that real interest rates have a negative impact on investment that is higher interest rates increase the cost of the borrowing used to finance most types of investment expenditures this tends to reduce the quantity of investment, while lower interest rates increase quantity of investment. According to Geng and N'diaye (2012) at the aggregate level, a 100 basis points increase in real interest rates reduces corporate investment in China by about ½ percent of GDP. Based on these estimates, raising real interest rates to the level of the marginal product of capital net of depreciation would probably lower investment by about 3 percent of GDP. The estimated effect for China of real interest rates on investment is much larger than the average of the other 52 economies in the panel. The estimated impact of interest rates changes on corporate investment is about half as big when estimated based on the firm-level data. This could possibly reflect the smaller reliance of this sample (which are large, listed enterprises) on bank-intermediated financing.

2.2.2 Exchange rate

An exchange rate appreciation lowers investment and vice versa as the exchange rate depreciates there is a corresponding increase in investments. As observed by Geng and N'diaye (2012) a 10% percent appreciation would reduce total investment by around 1 percent of GDP. The large concentration of manufacturing companies in the firm-level sample means that the estimated impact of exchange rate appreciation from the firm-level data is much larger.

2.2.3 Capital Stock

According to Rittenberg and Tregarthen (2014) the quantity of capital already in use affects the level of investment in two ways. First, because most investment replaces capital that has depreciated, a greater capital stock is likely to lead to more investment; there will be more capital to replace. But second, a greater capital stock can tend to reduce investment. That is because

investment occurs to adjust the stock of capital to its desired level. Given that desired level, the amount of investment needed to reach it will be lower when the current capital stock is higher.

2.2.4 Dividend policy and Retention policy

Modigliani and Miller (1961), in which they challenged the common belief that payment of dividend increases firm's value and argued that in perfect capital market a firm's dividend decision does not affect its value. But on the other hand, Lintner (1962) and Gordon (1963) supported "Bird-in-the-hand" theory and argued that in the world of uncertainty and imperfect information, high dividend payment is associated with high firm value.

Miller and Modigliani (1961) presented the irrelevance proposition and proved that in a perfect capital market firm's dividend decision is not a thing of value at all. During the last fifty years, the enduring nature of debate on dividend policy has generated a rich body of literature in which the majority of the researchers support that the payment of dividends has a positive impact on firms' value but on the other hand many researchers have argued that payment of dividends affect the firm's value negatively, still many others believe that dividend decisions is not a thing of value and have no significant impact on firms' perceived financial position.

Firms with high cash flow volatility are also those with the greatest potential agency costs. When cash flows are variable, it is difficult for investors to accurately attribute deviations in cash flows to the actions of corporate managers or to factors beyond management's control. Thus, the higher the expected variance in cash flows, the greater the potential agency costs, and the greater the reliance on dividend distributions. The value of dividend payout as a guarantee against non-value maximizing investments should be greatest for those firms with the greatest cash flow uncertainty. Therefore, the agency cost theory predicts that firms with volatile cash flows would, on average, pay out a greater proportion of their cash flows in the form of a dividend (Bradley et al, 1998).

According to Jensen's (1986) Free Cash Flow Hypothesis, companies prefer to use their cash resources to invest in profitable projects first and dividends are paid out of residual. Berle and Means (1932), who first time introduced the concept of separation of ownership and management, argued that the inefficient use of cash resources, in excess of profitable

investment opportunities by management, causes conflict of interest between ownership and management. Dividend and interest payment reduces the free cash flow available to management, hence reducing the chance of using it in less profitable projects or on managers' prerequisites. From companies' point of view, cash generated from operations plays an important role in deciding the amount of payout, companies having greater cash flow generated from operations are expected to be in a better position to pay cash dividends rather than companies having negative operating cash flows.

In relation to the above, Mizuno (2007) agrees to the fact that a firm ought to pay dividends to shareholders if it cannot identify suitable investments which would bring higher returns than those expected by the shareholders.

From cash flow sensitivity point of view prior studies reported that financially constrained firms accumulate higher cash holdings and retain greater portion of the cash earned during the period, which means that liquidity is more important when firms cannot raise funds from external market and liquid resources are required for investment in future profitable projects (Khurana et. al., 2006). Almeida et. al. (2004) points out that firms facing financial constraints will save more cash today to fund future investment opportunities. Intuitively, increasing tendency of saving cash out of free cash flows will indicate the availability of profitable projects and financial constraints and hence will reduce the payout ratio of the firm, provided that firms' access to external finance is limited to a certain level.

The payment of cash dividends to shareholders now is the opportunity cost of retaining the internal funds and investing the same in projects that have positive NPV that have greater returns to the shareholders in the future. This is influenced by the shareholders view that is largely explained by the 'bird in hand' theory, where the shareholder perceives the uncertainty of the future cash flows, which have a risk aspect in them. According to Amidu (2007) the bird in hand theory proposes that a relationship exists between firm value and dividend payout. It states that dividends are less risky than capital gains since they are more certain. Investors would therefore prefer dividends to capital gains.

According to Farsio et al. (2004) firms that pay high dividends without considering investment needs may therefore experience lower future earnings, also firms that consider investment

needs that have prospects of maximizing the shareholders wealth, either retain all internally generated funds or issue low dividends. This shows that there is a negative relationship between dividend payout and future earnings.

2.3 Empirical Review

This section discusses studies which have been conducted locally and internationally, which examines the relationship between free cash flows and investments.

Financing capital expenditure by utilizing the internally generated cash flow is highly recognized. According to Myers (1984) states that companies prioritize their sources of financing (from internal financing to equity) according to the law of least effort, or of least resistance, preferring to raise equity as the last financing means. Hence, internal financing is used first; when that is depleted, then debt is issued; and when it is no longer sensible to issue any more debt, equity is issued.

Modigliani and Miller's (1958) insignificance suggestion asserts firms to carry out all positive net present value (NPV) investments regardless of the financing source. Jensen (1986) adds that free cash flow as a cash in surplus of that necessary to fund all positive net present value projects. Free cash flow tempts managers to expand the scope of operations and the size of the firm, thus increasing managers' control and personal compensation, by investing free resources in projects that have zero or negative net present values. These spending is seen as unprofitable especially to the shareholders, therefore, an aspect of the basic conflict of interest between owners and managers that is the agency theory problem.

Free cash flow is inconsistent with the goal of owner to maximize their wealth. Expansions wasted by administration instead could have been distributed to the owners or stock holders as cash dividends or to the policyholders of mutual or stock firms in the form of lower premiums, higher policy dividends, or higher investment returns. The existence of free cash flow provides managers with an opportunity to waste cash on unprofitable capital spending. These unprofitable capital expenditure represents an incremental cost of the owner-manager conflict (Jensen, 1986).

With the previous paragraphs raising the issue of abuse of free cash flows, Jensen (1986) gives a remedy stating that the majority of existing evidence on the free cash flow hypothesis focuses on changes in financial structure. Leveraged buyout activities are one way of controlling free cash flow because the debt incurred in such transactions forces managers to pour out excess cash. It examines the cross-sectional relation between free cash flow and ownership structure and finds some evidence that organizational forms specific to the oil industry (corporations, limited partnerships, and royalty trusts) have different agency costs of free cash flow. Specifically, the Capital spending of free cash flow is lower in royalty trusts and limited partnerships than in corporations.

Vogt (1994) explains important implications for both investors and managers. While the study shows that cash flow-financed capital expenditure is marginally unproductive for some firms, the potential sources of this inefficiency have also been identified. Cash flow-financed growth by large, low-dividend firms tends to be value-destroying, while cash flow-financed growth is value-creating for small, low-dividend firms. The importance of dividends as a method of mitigating agency costs of free cash flow, moreover, is confirmed. Managers of free cash flow-rich companies may consider increasing dividend payouts as a method of increasing the efficiency of their capital spending decisions. A continued high-dividend-payout policy may also signal to shareholders that additional and costly monitoring of capital expenditure decisions is unnecessary.

Jensen's (1986) theory predicts that capital spending of equity is partly driven by free cash flow. Previous research indicates that the agency problems between owners and managers are greater in mutual organizations than in stock organizations, which leads to the expectation that the free cash flow problem will be greater in mutual insurers than in stock insurers. (Jensen, 1986)

Jensen's (1986) observations test for differences in free cash flow in capital spending automobile insurance industry. The purpose is to examine whether organizational form affects managerial behavior with respect to the holding of free cash flow rather distributing or investing.

Gentry (1990) analyzed capital spending with total cash outflow and found out that the percentage of cash outflows going to capital investment ranged from an outflow of 60 per cent or

more. The giant companies invested a higher percentage of their total outflow in plant and equipment than companies in the other size categories. The small companies invested the lowest percentage of their total outflows in capital.

Research was applied to agricultural firms by Farrell E. Jensen (1993) which showed that results are consistent with previous studies for non-agricultural firms which show that internal cash flow variables are important in explaining investment. Result indicate that internal cash flow variables are important and that the addition of internal cash flow variables can improve the explanatory power of agricultural investment models. In terms of elasticity, investment was more responsive to internal cash flow variables.

Vogt (1994) explains the relationship of cash flow and capital expenditure by analyzing the free cash flow theory of Jensen's (1986) and find outs that, since monitoring is costly, and managers can benefit from over investment, cash flow will significantly influence capital spending after controlling for the cost of capital. Capital expenditure of firms not paying dividends will be more influenced by cash flows than investment spending of firms that pay dividends. This follows because no-dividend firms are able to retain all cash flow and still not reach the retention constraint.

Vogt (1994) explains free cash flow assumption that cash flows should influence capital spending. The firms not paying dividends should demonstrate the strongest relationship between cash flow and capital expenditure, while those paying high dividends should show the weakest relationship.

Vogt (1994) explains the case of capital expenditure, the observed results tend to support the free cash flow description of the cash flow/capital expenditure relationship. Actions that supports the free cash flow assumption, however, it is found in small firms paying low dividends. In the case of Research and development expenditure, results are more reliable with the free cash flow assumption. These results together suggest that the effect that cash flow-financed investment has on firm value depends on asset size, dividend behavior, and the type of capital expenditure.

Vogt (1997) explains the strong influence that free cash flow has on capital expenditure is well documented. On the free-cash-flow hypothesis of Jensen (1986) as explanations for the

importance of free cash flow on capital expenditure. Initial results expose relations similar to those uncovered in previous studies. Capital expenditure is associated with positive and statistically significant with free cash flow. Firms with favorable investment opportunities are responsible for much of the positive, excess returns. Also, for firms announcing spending increases, the level of announced capital expenditure is positively and strongly related to the level of cash flow. The power of this relation increases for firms with profitable capital expenditure opportunities, as firm size declines, and as the proportion of insider ownership increases. Further analysis suggests that considerable diversity exists in the capital market's response to cash-flow-financed capital expenditure.

Vogt (1997) research's result indicate a positive and significant excess returns found in the sample announcing increases is concentrated in the smallest of the sample firms, in firms with low cash flow relative to capital expenditure, and, to a lesser extent, in firms with high levels of insider stock ownership. Tests elaborating the cross-sectional variation in returns disclose that excess returns for medium and small firms in the sample are positively associated with unexpected increases in planned spending. These tests also recommend that the market reacts more favorably to announced capital expenditure by small firms when the planned spending is more dependent on free cash flow. Conversely, excess returns for the largest firms in the sample are negative, though not statistically significant. Cross-sectional regressions specify that large firms have, excess returns and are negatively related to the extent that undistributed free cash flow is available to finance planned capital spending, and positively related to their capital spending opportunities.

These results are consistent with the hypothesis that small firms follow a free cash flow model like the one described by (Myers, 1984; Myers and Majluf, 1984). Because small firms and large firms are the most likely to face the liquidity constraints associated with asymmetric information, they are also the most likely to forgo profitable investment expenditure in times of cash-flow shortages. As free cash flow rises, the set of profitable capital expenditure projects the firm can undertake also increases. Consequently, capital expenditure is met with positive shareholder reactions, particularly when spending is dependent on cash flow.

Vogt (1997) finds some indication that is reliable with the free- cash-flow hypothesis. Excess returns are negatively related to large firm's ability to cover capital spending with cash flow. This is consistent with the FCF hypotheses. This apparent diversity in the market's response to capital spending decisions suggests different capital-spending financing policies for firms that seek to enhance shareholder value. Small firms with sizeable insider ownership and firms that are generally cash-flow constrained appear to be enhanced, on average, by financing capital spending with free cash flow. These firms might consider policies of conserving undistributed cash flow through low payout and leverage policies, thus encouraging new capital spending from internally generated funds. No evidence that free cash flow financed capital spending improves these firms' market values, on average. Furthermore, limited indication exists that such a financing strategy could reduce market value for large, low insider owned, and cash flow rich firms.

Vogt (1994) suggests that cash flow-financed capital spending is marginally inefficient and provides primary evidence in support of the FCF hypothesis. The negative relationship found in the aggregate data is concentrated in firms paying low dividends over the sample period, in large firms, and most strongly in large firms paying low dividends.

According to Worthington (1995) cash flows measures enter industry level investment equations positively and significantly, even after investment opportunities are proxied by capacity utilization variables. The effect of cash flow is greater in durable goods industries than in non-durable goods industries.

Klaus et al. (2004) tested the following hypothesis first asymmetric information (AI) hypothesis which predicted that firms underinvest and have returns on investment greater than their costs of capital, and second the managerial discretion (MD) hypothesis which predicts overinvestment and returns on investment less than the costs of capital, using the ratio of returns on investment to costs of capital for each firm is a natural way to make this identification.

Moyen (2004) explained the fact that the cash flow sensitivity of firms described by the constrained model is lower than the cash flow sensitivity of firms described by the unconstrained model can be easily explained. In both models, cash flow is highly correlated with investment

opportunities. With more favorable opportunities, both constrained and unconstrained firms invest more.

Aggarwal (2005) started a study on four controlling for the investment opportunity set, and he concluded investment levels are significantly positively influenced by levels of internal cash flows. The strength of this association generally increases with the level of financial constraints faced by firms. Overall, these findings seem strong to the nature of the financial system and indicate that most firms operate in financially incomplete and imperfect markets and find external finance to be less attractive than internal finance.

Becker and Sivadasan (2006) concluded for their research paper that in frictionless financial markets, investment does not depend on internal cash flows. In a large European data set, results indicate that firms invest more on average when they have higher cash flow. Contribution to the literature is being made by testing formally if the coefficient on internal resources (cash flow) is related to a country's financial development. Comparing countries, it is further discovered the cash flow effect is indeed stronger in countries with weaker financial development. This suggests that financial constraints are strongest when financial development is low.

Vogt (1994) gives an explanation on free cash flow, however, is still a significant variable in the capital expenditure behavior of small, low-payout firms. The constraint predicts, less than those associated with the larger firms in the low-payout group, is still highly significant. Consequently, the asymmetric information induced free cash flow assumption explanation cannot be dismissed. The most reasonable argument is that both free cash flow and asymmetric information are important factors contributing to the influence of cash flow on capital spending.

Vogt (1994) explains different incentives that Research and development and capital expenditure may generate for managers over time. Research and development represents an expenditure on intangible assets whose impact on the asset size and future cash flows of the firm is extremely uncertain and secondly not likely to be realized in the near future. Fixed plant and equipment expenditure is likely to produce more certain cash flows in the near future (in part because of accelerated depreciation allowances) as well as increase the tangible asset base of the firm. The effect of plant and equipment expenditure is to generate free cash flow that can be used in the

next period. Consequently, capital expenditure may be more susceptible to free cash flow problems than research and development expenditure.

According to Mizen (2005) the relationship between cash flow and investment are based on sample-splitting between constrained and unconstrained firms taken from a single country. The degree of sensitivity appears to be greater. It extends the literature by examining from a number of perspectives the behavior of firms. The research article proposes a number of hypotheses that are explored in turn. A first possible reason is that firms in market-oriented financial systems show greater sensitivity to cash flow because borrowers and lenders operate at arms-length compared to those in relationship-oriented systems. A second possible cause for differences in response to cash flow across countries is that the samples of firms taken from each country might differ in composition with respect to particular characteristics, for instance size. Equally, the industrial type may be an important determinant of investment sensitivity to cash flow since industries differ considerably in terms of the size of firms, capital-intensity, borrowing capacity, openness and the durability of their output.

Whilst investment is measured by capital expenditure, the same is deflated by the capital stock. Investment cash flow sensitivity is defined as the level of the company's financial constraints. Cash flow sensitivity of investment reflects higher cost of external financing relative to internal financing due to asymmetric information or agency problem. Other studies show a relationship between cash flow sensitivity and financing constraints are sensitive to how the company is classified into two groups who are financially constrained and non-financially constrained. Fazzari et al (1998) stated that in addition to the opportunity to grow, investment by companies as well affect the company's cash flow and more will further reduce the company's dividend payment.

Hovakimian and Hovakimian (2005) concluded that there is a positive relationship between internal funds and investment decisions due to the liquidity constraints faced by firms as a result of the gap between the cost of external financing and internal financing. The results Alt (2003) showed that the relationship between investment and cash flow is stronger in companies that are in growth stage, which is likely to experience financial difficulties because the companies have

to make adjustments between the investments made with generated cash flow. Moreover it reflects the company's growth opportunities.

Alti (2003) continues to expound that investment is sensitive to cash flow, even after controlling for its link to profitability by conditioning market. Furthermore, the sensitivity is substantially higher for young, small firms with high growth rates and low dividend payout ratios, as it is in the data. The uncertainty these firms face about their growth prospects amplifies the investment-cash flow sensitivity in that, the uncertainty is resolved in time as cash flow realizations provide new information about investment opportunities. This makes capital expenditure highly sensitive to free cash flow surprises.

Gentry (1990) tells about free cash flow analysis shows that the financial health of a company depends upon its ability to generate net operating cash flows that are sufficient to cover a hierarchy of cash outflows. The profiles generated from a large sample of companies show that relative cash flow components vary across company size and across industry groups. The researcher hopes that these profiles will serve as benchmarks for comparing cash flow components and encourage financial analysts to use cash flow analysis.

Bo Becker (2006) research explains that in frictionless financial markets, investment does not depend on internal cash flows. In a large European data set, the researcher finds that firms invest more on average when they have higher cash flow. The researcher contributes to the literature by testing formally if the coefficient on internal resources that is cash flow is related to a country's financial development. Comparing with different countries, the researcher finds that the cash flow effect is indeed stronger in countries with weaker financial development. This suggests that financial constraints are strongest when financial development is low. The effect is weaker inside conglomerates and is probably not driven by the East-West difference. This is consistent with the idea that conglomerates ease internal financial constraints. Industries with few low liquid assets may experience bigger benefits of financial development (i.e. the cash flow coefficient is reduced more by financial development in low liquidity industries). However, the proof for this is diverse. Our findings suggest that financial frictions operate in Europe. They suggest that financial development is beneficial because it reduces financial constraints at the firm level and therefore relaxes the correlation between internal resources and investment.

An important implication of adverse selection is that firms with positive NPV investment opportunities will forgo profitable projects to avoid the excessive cost of external financing. This implication has been explored in detail by Fazzari et al. (1998) for capital spending and Himmelberg and Peterson (1994) for research and development spending. These authors show formally that the excess cost of external finance causes some firms to be liquidity constrained, so that cash flow becomes an important determinant of investment spending.

In an in depth study of 25 large firms, Gordon Donaldson (1961) concludes that management strongly favored internal generation as a source of new funds even to the exclusion of external funds except for occasional unavoidable ‘bulges’ in the need for new funds. A more recent survey of 176 corporate managers by Pinegar and Wilbricht (1989) also finds that managers prefer cash flow over external sources to finance new investment; 84.3 percent of sample respondents indicate a preference for financing investment with cash flow.

2.4 Summary of the Literature Review

The two main conclusions that are drawn from the MM theorems are that firm value is dependent on its current and future free cash flow. Secondly, the level of dividends (or dividend policy) does not affect firm value given that firms maximize their value through investment. Whilst investment increases the value of future cash flows. With regards to the impact of dividend policy decision on investment, it is understood that firms should take all projects with a positive Net Present Value (NPV). However, the issue is that if management put more emphasis on dividend policy to such an extent that it eventually dominates investment policy decisions, it could be argued that NPV projects or projects creating firm value be cancelled or delayed for a later time. By cancelling or delaying positive NPV projects, this will obviously have an adverse effect on the future expected profits of the company.

In relation to the agency theory problem and its relevance to free cash flow-investment relationship Jensen and Meckling (1976) suggests the way to mitigate the chances of this kind of behavior from managers is by giving and or increasing the ownership of managers in the firm they manage. If the manager has ownership in the firm, it puts her/him in a position of unwillingness to loosely spend the firm’s money. With this step (s)he will recognize and beware that the firm money (partly his money) should be carefully managed. Therefore

managers will see to it that they utilize the free cash flows by investing in positive NPV projects that maximize the firm's value.

The Pecking Order theory popularized by Myers (1984) tries to capture the costs of asymmetric information. It states that companies prioritize their sources of financing (from internal financing to equity) the theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required (equity would mean issuing shares which meant 'bringing external ownership' into the company). This clearly illustrates that the free internal funds can first be used to finance the investment needs of the firm.

The kind of conflict that comes about when the owners of the business are separated from the control of the business. Managers of firms may diverge from the goal of the owners which is the maximization of the firm value. Instead, managers may choose to behave in a way that will satisfy their interest. This can be in the form of luxuriant office and cars, expensive travels, extravagant benefits etc. (Jensen and Meckling, 1976). The way to mitigate the chances of this kind of behavior from managers is by giving and or increasing the ownership of managers in the firm they manage. If the manager has ownership in the firm, it puts her/him in a position of unwillingness to loosely spend the firm's money. With this step (s)he will recognize and beware that the firm money (partly his money) should be carefully managed. Therefore the managers will faithfully utilize the free cash flows by investing in projects that add value to the portfolio of the shareholders.

In Kenya, few research studies relating to investment decisions have been done, but clear research study on the relationship between free cash flows and investments has not been carried out in Kenya, therefore this research seeks to fill this gap by doing this research study on firms listed at the Nairobi Securities Exchange. The focus is on free cash flows although they have not receive as much attention as earnings do, they are considered by some experts to be a better indicator of a company's financial health.

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

The main purpose of the study was to find out the relationship between free cash flows and investment decisions of quoted companies at the NSE. This chapter discusses the research design, population of the study, sampling design, data collection, research models and data analysis.

3.2 Research Design

This research study adopted the descriptive research design. This design gives a description of phenomenon, characteristics and association of the research variables. It is appropriate for the study as it will enable high level analysis such as correlation and regression analysis that will allow to establish the nature and the extent of the relationship between free cash flows and investment decisions of quoted companies at the NSE. Quantifiable data was collected to determine the current status of the relationship. The research design employed secondary quantitative data. The data was obtained from the current financial reports of the companies listed at the NSE.

3.3 The Population

The population of the study covered companies listed at the NSE (See Appendix I). NSE (2014) provided that there are a total of sixty one companies listed, therefore our population size will be these sixty one listed companies.

3.4 Sampling Method

A sample of thirty companies (See Appendix I) that have been quoted for the five years (2009 – 2013) will be considered from the population. The sample was selected by randomly picking a company from each sector or industry of firms listed in the NSE.

Simple random sampling will be used to select the sample from the population, for the technique minimizes bias and increases the chances of representativeness. Mugenda & Mugenda (2003) suggested that for correlation research, 30 cases or more are required. Since this study involved

determining the relationship between free cash flows and investments, a sample of 30 firms listed at the NSE was considered sufficient.

3.5 Data Collection

The secondary data was extracted from the audited annual reports and financial statements of individual companies sourced from the NSE and the CMA. In order to determine the relationship that exists between free cash flows and investment decisions of companies quoted at the NSE, a period of five years (2009 – 2013) was considered. Data collected was classified as per sectors of the individual sampled companies. Group consolidated annual reports and financial statements were considered since they portrayed overall performance of a firm unlike the company's financial statements which show part performance of a company in a given region. The annual financial statements included the statements of comprehensive income, financial position, cash flows, changes in equity and the notes to the financial statements.

3.6 Data Analysis

The data collected for this study was cleaned, edited and tested for completeness. This was done to ensure that the data used was adequately reflective, accurate and reliable for conclusion and realization of the research objective of this study. SPSS software was used to carry out the analysis of the data obtained. The researcher used the multiple linear regression analysis technique, a statistical tool that was used to analyze the association between a dependent variable and several independent variables. According to Hair (2006) the objective of multiple linear regression analysis is to use the independent variables whose values are known to forecast the single dependent value selected by the researcher.

The data was presented in form of tables and charts where appropriate. The study used three independent variables. The researcher constructed a regression model to analyze the reliance investments (the dependent variables) on the independent variable outlined below.

3.6.1 Research Model

The model adopted by this study was the multiple linear regression model. This is a technique that allows many factors to enter the analysis separately so that the effect of each can be

estimated. It is valuable for quantifying the impact of various simultaneous influences upon a single dependent variable.

Data collected on the variable of interest within the period of study were analyzed through descriptive statistics. Further multiple regressions and correlation analysis will be used to explain the nature and significance of relationship between changes in the response variables (investments) and change in the prediction variables (determinants) identified in the study. The regression model used is shown below:

$$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + e_t$$

Where:

Y = NCE - Net Capital Expenditure

B_0 – constant

B_1, B_2, B_3 – regression coefficients

X_1 = Free Cash Flows (FCF)

X_2 = Dividends Payout Ratio

X_3 = Depreciation

e_t = Error term/Disturbance term

The hypothesis of the study:

H0: Free Cash flow has no relationship with investment or capital expenditure.

H1: Free Cash flow has relationship with investment or capital expenditure.

Measurement of variables

The equation:

Dependent Variable = Independent Variable, that is a change in Fixed Assets is equal to Free Cash Flow. The control variables in this case include: dividends payout and capital stock or depreciation. Where the:

- i) Independent Variable = Free Cash Flow (FCF)
- ii) Dependent Variable = Net investment or Net capital expenditure

Vogt, 1997 explains free cash flow, as operating income before depreciation, less interest expense on debt, less income taxes, less preferred and common dividends. FCF is a coverage ratio representing the amount to which current period generated free cash flow is sufficient to cover next period's capital expenditures. Free cash flow was determined as follows:

$$\text{FCF} = \text{Operating Income} + \text{Depreciation} - \text{Interest Expense} - \text{Income Taxes} - \text{Expected loan (less repayment)} - \text{Dividends}$$

$$\text{Dividends payout} = \text{Dividend per Share} / \text{Earnings per Share}$$

$$\text{Depreciation} = ((\text{Initial asset cost} - \text{terminal value}) / \text{economic useful life})$$

Capital expenditure was considered as funds spent by a company to buy or upgrade fixed assets, such as equipment, during the year and acquiring subsidiaries. It was also considered as a payment by a business for basic assets such as property, fixtures, or machinery, that is an increase in the value of company assets and is usually intended to improve productivity but not for day-to-day operations such as payroll, inventory, maintenance and advertising.

$$\text{Net Capital Expenditure} = (\text{Current Year} - \text{Previous Year})$$

The greatest advantage with regression analysis was that the parameters were estimated to show causality between explanatory variables and regressors. Parameters estimated suggest magnitude and direction the independent variables have on the explanatory variables. In order to test the significance of the model in measuring the relationship between independent and dependent variable, this study conducted an Analysis of Variance (ANOVA). On

extracting the ANOVA statistics, the researcher looked at the significance value. The study was tested at 95% confidence level and 5% significant level. If the significance number was found to be less than the critical value set, then the conclusion will be that the model is significant in explaining the relationship.

CHAPTER FOUR:

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the findings derived from data collected and further analyzed. The analyzed data is presented in tables and charts in terms of derived means, frequencies, percentages and proportions where necessary. Explanations of the findings are discussed after each table. The chapter constitute of the general findings of various variables on free cash flows and investments, the relationship between free cash flows and investments of companies quoted at the NSE and finally the overall summary of the findings.

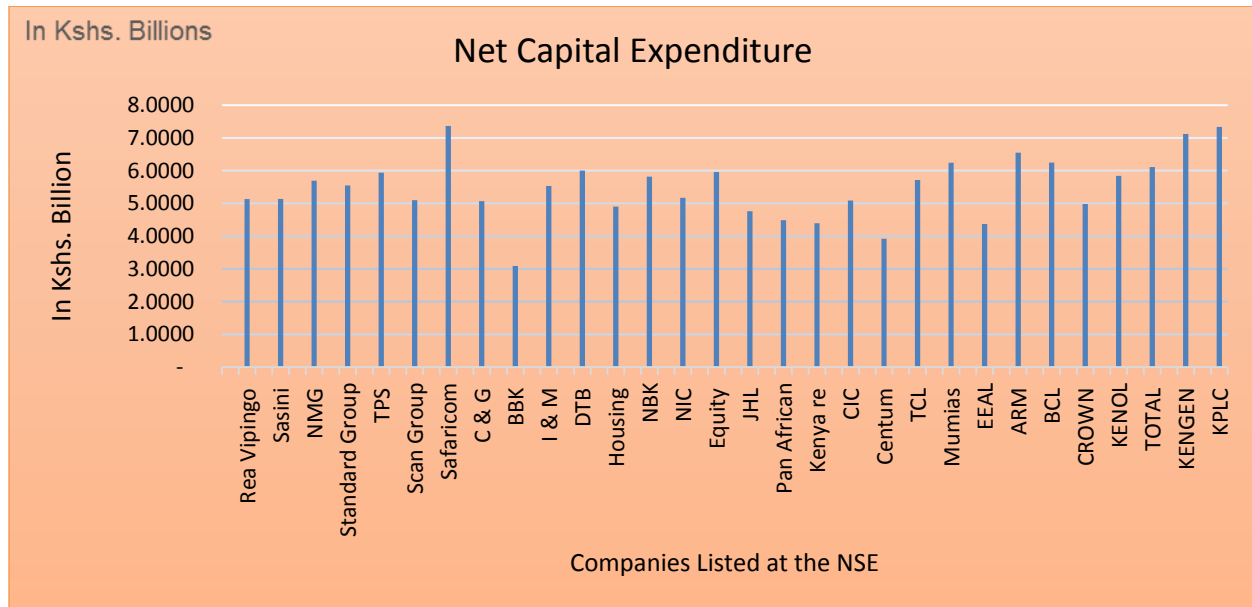
4.2 General Findings

This section details the findings of various variables analyzed. Descriptive statistics was used to analyze the data collected and presented in tabular form (See Appendices II). A sample of thirty companies quoted at the Nairobi securities exchange (NSE) was used.

4.2.1 Net Capital Expenditure

The summary of the data collected on Net Capital Expenditure is represented in the chart below (chart 4.1) in relation to the companies quoted in the NSE. From the sample of thirty companies, it shows that safaricom has the highest values of net capital expenditure. This is due to the high investment in property plant and equipment, and other telecommunication items, the same case goes to Kengen and Kenya power companies. The chart shows that Barclays bank has the lowest values of net capital expenditure, although the bank did acquire assets but not as much as the other companies. It is clear that investments, which in this case are represented by net capital expenditure differs from company to company depending on the nature of business and sector under operations. It also depends on the stage in company cycle for example at start up and growth stages companies tend to engage in vigorous investment activities unlike at maturity and post maturity stages where companies do not necessarily engage in extensive investment projects.

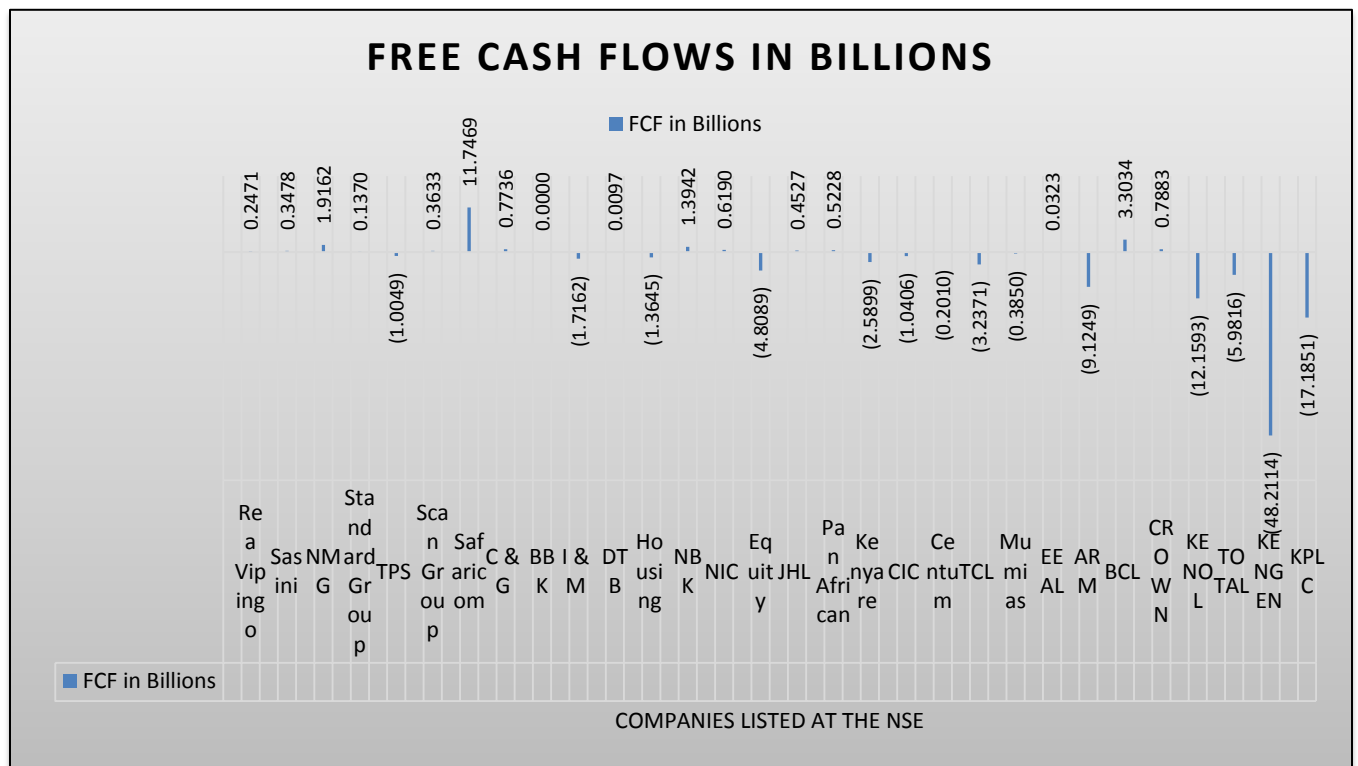
Chart 4.1 Net Capital Expenditure



4.2.2 Free Cash Flows

From the chart below (chart 4.2) the data collected on free cash flows in relation to the firms listed in the NSE, show that Kengen and Kenya Power firms have the lowest levels of free cash flows going to even negative values. This is due to the high levels of borrowing in this firms. With respect to the items making up the free cash flows figure, whilst the revenue levels are not quite high as compared to a company say Safaricom with high levels of revenues, the high levels of borrowing greatly reduces the free cash flows value. Even though Safaricom also has high levels of borrowing, the high levels of revenue counteracts the other providing a niche to have the highest values of free cash flows as shown in the chart below.

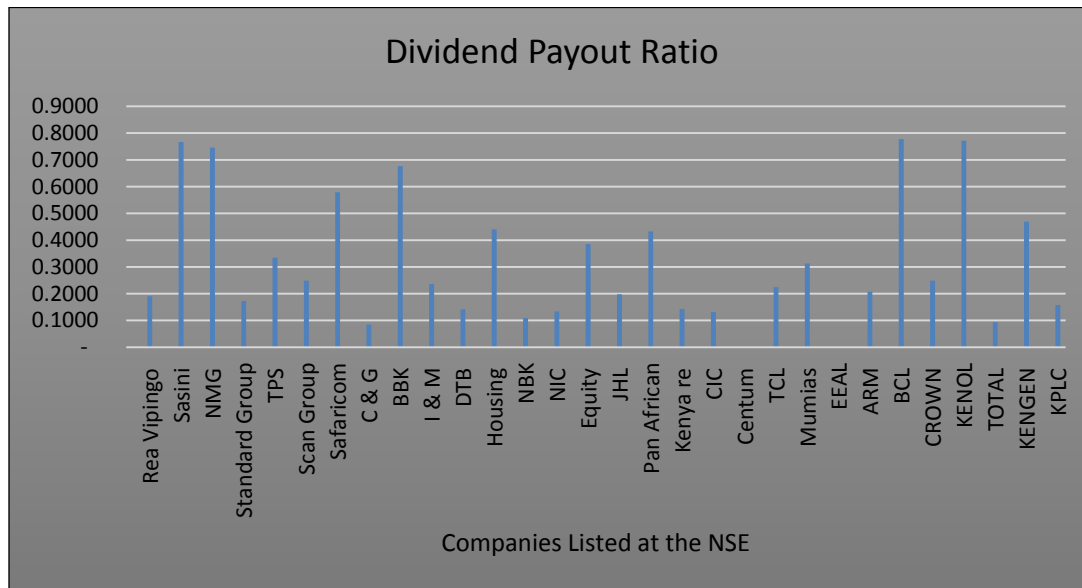
Chart 4.2 Free Cash Flows



4.2.3 Dividend Payout Ratio

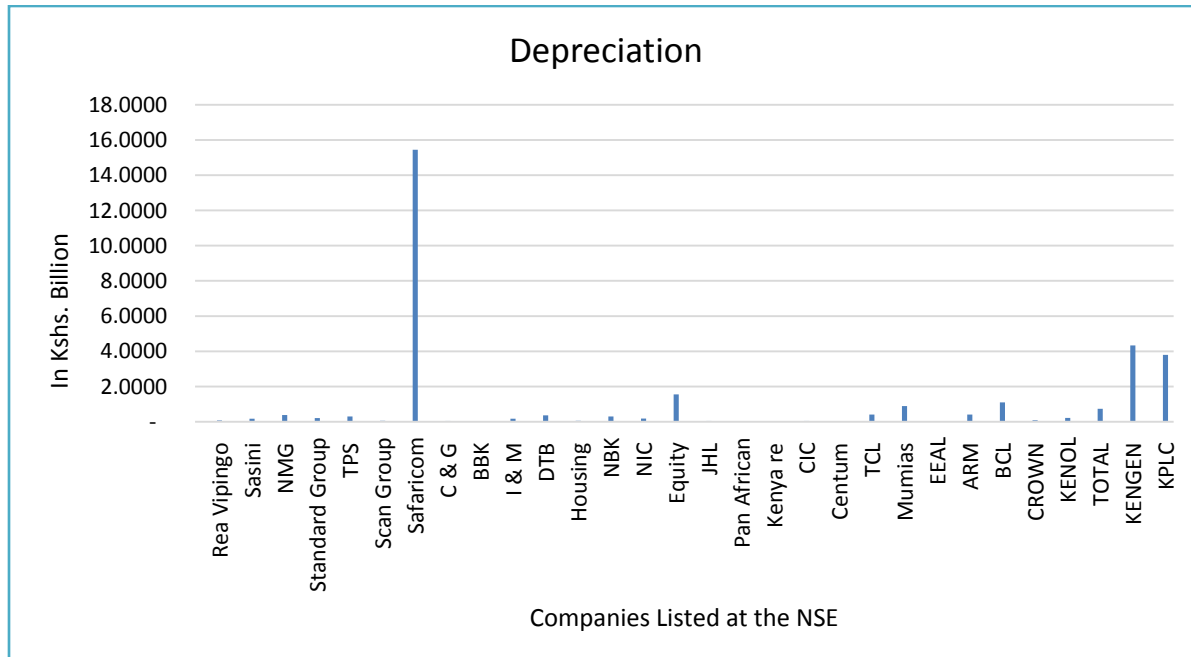
From the chart below (chart 4.3) shows how dividends were distributed to those attributable to sharing dividends. From the chart, Eveready East Africa Ltd did not issue dividends during the 5years period, whereas Centum Investments issued bonus dividends (this do not have any effect to the cash flows of the firms), as shown on chart 4.1 Centum Investment reveals fair levels of investment especially in investment property, revealing why they issue bonus dividends instead of cash dividends. Firms like Bamburi Cement Ltd, Sasini Tea, Kenol and Nation Media Group show high levels of dividend issued with more than 60% of payout leaving less than 40% for retention by the companies, this reduces the levels of free cash flows. Most companies showing a payout of more than 10%, revealing a tendency of retention.

Chart 4.3 Dividend Payout Ratio



4.2.4 Depreciation

Chart 4.4 Depreciation



Depreciation in this study indicates the extent to which most investment replaces capital that has already depreciated, a greater capital stock is likely to lead to more investment; there will be more capital to replace. From the chart 4.4 above the companies that have the highest levels of

depreciation are Safaricom, Kengen and Kenya Power Ltd, this corresponds to the analysis seen earlier in chart 4.1 where investments represented by net capital expenditure amongst Safaricom, Kengen and Kenya Power Ltd, has high levels of net capital expenditure. This implies that as depreciation increases, the need to replace items that have hit their economic useful life, therefore the increase in capital expenditure.

4.3 Correlation Analysis

Correlation coefficient indicates strength and direction between variables. Specifically, partial correlation coefficient shows correlation between two variables holding others constant. Table 4.1 shows Pearson correlation coefficients of variables of our interest.

Table 4.1: Correlations Matrix

Correlations

		Net Capital Expenditure	Free Cash Flows	DPR	Depreciation
Pearson Correlation	Net Capital Expenditure	1.000			
	Free Cash Flows	0.707	1.000		
	DPR	0.032	0.338	1.000	
	Depreciation	0.644	0.971	0.248	1.000
Sig. (1-tailed)	Net Capital Expenditure	.			
	Free Cash Flows	0.003	.		
	DPR	0.910	0.218	.	
	Depreciation	0.009	0.000	0.373	.
N		15	15	15	15

Note: Correlation is significant at the 0.05 level (2-tailed).

In table 4.1 above shows that there is positive correlation between net capital expenditure (NCE) with variables of free cash flows of 0.707 with a probability of 0.003, dividend payout ratio of 0.032 with a probability value of 0.910, and depreciation value of 0.644 with a probability of 0.009. There is a correlation between the variables at 5% confidence level, they are significant.

4.4 Regression Analysis and Hypothesis testing

In addition to the above analysis, the researcher conducted a multiple regression analysis so as to test the relationship among independent variables. The researcher applied the Statistical Package for Social Sciences (SPSS Version 20) aid in computation of the measurements of the multiple regressions for the study. The findings are as shown in the table 4.2 below:

Table 4.2: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.789 ^a	0.622	0.519	0.649

a. Predictors: (Constant), Free cash flows, DPR and Depreciation

The coefficient of determination explains the extent to which changes in the dependent variable (Investments) can be explained by the change in the independent variables (free cash flows, dividend payout ratio and depreciation).

The three independent variables that were studied, explain only 62.20% of the changes in the investments of firms quoted at the NSE as represented by the adjusted R^2 . The R column represents the multiple correlation coefficients which measures the quality of the prediction of dependent variable. In this case the value of R is 0.789 which shows a strong level of prediction. However, the R^2 which is the coefficient of determination is 0.622 indicating that only 62.20% of the investments of firms quoted at the NSE can be explained by free cash flows, dividend payout ratio and depreciation, the other 37.8% can be explained by other variables which were not in the model.

Table 4.3: Analysis of Variance (ANOVA)**ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	7.613	3	2.538	6.030	0.011 ^b
Residual	4.629	11	0.421		
Total	12.242	14			

a. Dependent Variable: Net Capital Expenditure

b. Predictors: (Constant) Free cash flows, DPR and Depreciation

To test for the existence of a linear relationship between free cash flows and investment variables, Analysis of Variance was employed. The results from the analysis of variance as per table 4.3 shows that the regression relationship between free cash flows and the investment variables are statistically significant at 5% level of significance (F value = 6.030, p-value = 0.011 < 0.05), meaning that there is a significant effect of the free cash flows, DPR and Depreciation on Investments of Companies Quoted at the NSE. This can be shown by the significant level which is 0.011 which is less than 0.05.

Table 4.4: Coefficients of Determination**Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	5.150	0.297		17.320	0.000
FCF	0.635	0.271	2.011	2.345	0.039
DPR	-1.210	0.740	-0.345	-1.634	0.131
Depreciation	-0.290	0.198	-1.223	-1.468	0.170

a. Dependent Variable: Net Capital Expenditure

The researcher conducted a multiple regression analysis so as to determine the relationship between free cash flows and investments of firms quoted at the NSE, and the three variables investigated were; the estimated model was:

$$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + e_t$$

$$Y = 5.150 + 0.635X_1 - 1.210 X_2 - 0.290X_3 \dots\dots\dots \text{Unstandardized Equation}$$

$$Y = 2.011X_1 - 0.345 X_2 - 1.223X_3 \dots\dots\dots \text{Standardized Equation}$$

$$\text{Std. Error } [0.297] [0.271] [0.740] [0.198]$$

$$t\text{- Statistics } [17.320] [2.345] [-1.634] [-1.468]$$

$$R^2 = 0.622$$

$$\text{Adjusted } R^2 = 0.519$$

$$\text{Multiple } R = 0.789$$

$$\text{Durbin Watson Statistic} = 2.069$$

Total variation explained by the regression model as indicated by R square and adjusted R is 0.622 or 62.2 % and 0.519 or 51.9% show that the model fairly strong for the study. It is clear that there are other variables that affect investments not explained by the model. So the variation explained by the independent variable FCF is positive.

The mean net capital expenditure intercept of 5.150 indicates that for every increase on the variables considered, there are 5.150 increases in Net Capital Expenditure. The Durbin Watson Statistic of 2.069 falls between 1 and 3 and thus shows that the model is good.

That means if FCF will change by 1 billion, Log of Net Capital Expenditure will change by 0.635, which means Net Capital Expenditure will increase by 1.635 billion. The regression coefficient represents the amount of change in the dependent variable for a one unit change in the independent variable. (Hair, 2006)

The multiple R of 0.789 indicates that there is strong relationship between Net Capital Expenditure and variables considered. The regression model result is pointing out that FCF has a positive impact on Net Capital Expenditure. (Hair, 2006)

The t – statistics were used to test the hypothesis that there is a relationship between free cash flows and investment in the regression equation above.

$H_0: \beta_0 = 0$: Free Cash flow has no relationship with investment or capital expenditure.

$H_1: \beta_1 \neq 0$: Free Cash flow has relationship with investment or capital expenditure.

From the analysis, the t – statistics is -2.345, the F value is 6.030 and the p value is 0.011

$P \text{ value} < \alpha (0.05)$ and the $p \text{ value} \neq 0$; thus reject the null hypothesis.

The general conclusion is that there is positive fairly significant relationship between Free Cash flow and Net capital expenditure of companies quoted at the NSE.

4.5 Summary

In summary, there is a fairly positive relationship between Free Cash flows and investments due to the fact that firms quoted at the NSE have the might in terms of size (revenues and profit after tax) to be able to finance some of their investments using the free cash flows or internally generated funds as their first choice for they have a lower explicit cost. The firms adopt the pecking order theory by first utilizing retained earnings since it is cheaper; then debt in order to control ownership of the firm and finally equity issue to spread risks among various shareholders.

On the other hand firms quoted at the NSE have the might in terms of size (revenues and profit after tax) to be able to finance most of their investments using debt (leverage) for as firms grow in terms of cash flows and profit levels they tend to stabilize and their opportunity to borrow is highly welcomed by the lending institutions. This is seen clearly in chart 4.2 where the levels of free cash flows are reduced by the high levels of borrowing by firms to purchase capital items.

The DPR and depreciation have a negative relationship with investments or capital expenditure. On DPR the negative relationship is triggered by the fact that firms are torn between two lines either to pay dividends to shareholders or retain the funds to invest in projects with positive NPVs that generate returns adding value to the firm in the future. Some firms opt to use debt to invest as a cheaper source of funds than external equity and payout most or all of the internal funds or free cash flows as dividends to reward the shareholders. This is seen to support the

agency theory and trade – off concept that argue that large firms have high borrowing capacity since they have diversified their operations into different sectors hence high total assets value. As the firms grow in size, cash flows and profit levels tend to stabilize and the possibility of going bankrupt is reduced.

On depreciation, as the value of deprecation increases the corresponding effect is to replace the items that have hit their economic useful lives, this therefore has a positive effect on net capital expenditure due to the additions to be made to replace the depreciated item but from the results it is a negative relationship. In chapter three, we also discussed that a greater capital stock can tend to reduce investment. That is because investment occurs to adjust the stock of capital to its desired level. Given that desired level, the amount of investment needed to reach it will be lower when the current capital stock is higher (Rittenberg and Tregarthen, 2014).

CHAPTER FIVE:

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The objective of the study was to determine the relationship between Free Cash flows and investments of companies quoted at the NSE and also to determine the effect of Free Cash flows on investments and how this affects the firm's operations. This chapter is a recap of the findings detailed in the previous chapters and make recommendations for further research to researchers and policy makers. The significant findings are summarized and conclusions drawn.

5.2 Summary

The study sought to determine the relationship between Free Cash flows and investments from the year 2009 – 2013. The research revealed that there is fairly positive significant relationship between Free Cash flows and investments. Firms adopt the pecking order theory by utilizing retained earnings since no floatation cost is involved. When it is over, they use debt to control ownership and finally external equity is employed to spread risks among various stakeholders.

DPR and depreciation are among the variables tested and found to affect investments. From the analysis DPR and depreciation have a negative relationship with investments. It was further revealed that DPR and depreciation have a fairly significant relationship with capital expenditure, whereas Free Cash flows had a significant relationship with investments.

5.3 Conclusions

From the organizations considered, it was established that there is a positive fairly significant relationship between free cash flows and investment that is as the level of free cash flows increase, the level of investments increases. Firms prefer internally generated funds since they are cheaper to finance their investment needs especially short term projects and long-term projects that require immediate commitment (those that may not wait for strategic plans to be made). This is before they seek other sources of financing investment projects, like debt and

external equity. For firms adopt the pecking order theory by utilizing retained earnings since no floatation cost are involved. When it is over, they use debt to control ownership and finally external equity is employed to spread risks among various stakeholders.

Therefore, this positive relationship seeks to explain the reason why free cash flows are first choice to finance investment projects, even though for most companies in the NSE may prefer debt to finance their investment agendas as we saw earlier in the previous chapter, where their level of borrowings is high corresponding to the levels of capital expenditure. The more a firm engages in extensive investment projects, the more funding it requires. If the internally generated funds cannot wholly finance the projects (funds not enough or distributed as dividends) the firm seeks other avenues to source funds and because debt (even though debt usage is expensive since the cost of debt surpasses the tax shield advantage and increases chances of liquidation) is preferred to equity, the firm will go for debt as the second choice and finally to external equity.

While the study shows that cash flow financed capital expenditure is marginally unproductive for some firms, the potential sources of this inefficiency have also been identified. Cash flow financed growth by large, low dividend firms tends to be value destroying, while cash flow financed growth is value-creating for small, low dividend firms.

5.4 Recommendations

In this study, it was observed that the relationship between free cash flows and investments of firms quoted at the NSE have a fairly significant relationship. Therefore various stakeholders in this industry should strive to carry out researches in order to be able to identify which are other major factors that affect the performance of their industry. This will enable them to know the main factors that may influence investment decisions to ensure that firms make more factual investment decisions increasing their return on assets, thereby increase in their financial performance and maximize shareholders' wealth.

In this study, it can be observed that most firms give much attention to profits after tax or earnings, which are not as refined as free cash flows are. Therefore, I would recommend that the financial reports should disclose the value of free cash flows for it is considered by some experts to be a better indicator of a company's financial health.

The importance of dividends as a method of mitigating agency costs of free cash flow, moreover, is confirmed. Managers of firms' with large cash flows may consider increasing dividend payouts as a method of increasing the efficiency of their capital expenditure decisions. A continued high dividend-payout policy may also signal to shareholders that additional and costly monitoring of capital expenditure decisions is unnecessary.

This study will help managers to make a good dividend payout policy and it will be useful for capital expenditure decisions also.

5.5 Limitations of the Study

There were various limitations which related to this study and which need to be mentioned to ensure that a researcher puts them into consideration when planning for a research project. Some of these limitations are outlined as below.

This study used only three variables as the measures of the relationship between free cash flows and investments, hence there is need to carry out the study with other different factors in order to be able to establish whether there are other major factors that have a relationship with investments at the NSE.

There was also issue of time and cost constraint whereby the time required analysing the data needs to be created to ensure that one is able to carry out an effective study.

5.6 Suggestions for Further Research

This study advocates that further studies can be done in this areas, they may include: the relationship between leverage and investments to quite clearly know the strength of the relationship and whether leverage can be indeed a factor that affects investment as mentioned in our study. Further research to be done to know whether free cash flows relate to investment among the private companies, medium firms and small firms in this nation or in other nations. Also, to know the extent of the relationship in the different sectors or industry.

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APPENDICES

APPENDIX 1: COMPANIES LISTED IN THE NSE

INDUSTRY/SECTOR AND THE NAME OF THE COMPANY			
	AGRICULTURAL		INSURANCE
1	Eaagads Ltd	33	Jubilee Holdings Ltd
2	Kapchorua Tea Co. Ltd	34	Pan Africa Insurance Holdings Ltd
3	Kakuzi	35	Kenya Re-Insurance Corporation Ltd
4	Limuru Tea Co. Ltd	36	Liberty Kenya Holdings Ltd
5	Rea Vipingo Plantations Ltd	37	British-American Investments Company (Kenya) Ltd
6	Sasini Ltd	38	CIC Insurance Group Ltd
7	Williamson Tea Kenya Ltd		INVESTMENT
	COMMERCIAL AND SERVICES	39	Olympia Capital Holdings Ltd
8	Express Ltd	40	Centum Investment Co Ltd
9	Kenya Airways Ltd	41	Trans-Century Ltd
10	Nation Media Group		MANUFACTURING AND ALLIED
11	Standard Group Ltd	42	B.O.C Kenya Ltd
12	TPS Eastern Africa (Serena) Ltd	43	British American Tobacco Kenya Ltd
13	Scangroup Ltd	44	Carbacid Investments Ltd
14	Uchumi Supermarket Ltd	45	East African Breweries Ltd
15	Hutchings Biemer Ltd	46	Mumias Sugar Co. Ltd
16	Longhorn Kenya Ltd	47	Unga Group Ltd
	TELECOMMUNICATION AND TECHNOLOGY	48	Eveready East Africa Ltd
17	Safaricom Ltd	49	Kenya Orchards Ltd
	AUTOMOBILES AND ACCESSORIES	50	A.Baumann CO Ltd
18	Car and General (K) Ltd		CONSTRUCTION AND ALLIED
19	CMC Holdings Ltd	51	Athi River Mining
20	Sameer Africa Ltd	52	Bamburi Cement Ltd
21	Marshalls (E.A.) Ltd	53	Crown Berger Ltd
	BANKING	54	E.A.Cables Ltd
22	Barclays Bank Ltd	55	E.A.Portland Cement Ltd
23	CFC Stanbic Holdings Ltd		ENERGY AND PETROLEUM
24	I&M Holdings Ltd	56	KenolKobil Ltd
25	Diamond Trust Bank Kenya Ltd	57	Total Kenya Ltd
26	Housing Finance Co Ltd	58	KenGen Ltd
27	Kenya Commercial Bank Ltd	59	Kenya Power & Lighting Co Ltd
28	National Bank of Kenya Ltd	60	Umeme Ltd
29	NIC Bank Ltd		GROWTH ENTERPRISE MARKET SEGMENT
30	Standard Chartered Bank Ltd	61	Home Afrika
31	Equity Bank Ltd		
32	The Co-operative Bank of Kenya Ltd		

**APPENDIX II: Samples used and Data on Determinants that affect Investments of Firms –
Descriptive Statistics (Mean)**

5 Year Averages		Net Capital Expenditure (Log NCE)	Free Cash Flows in Billions	DPR	Depreciation in Billions
1	Rea Vipingo	5.1336	0.2471	0.1905	0.0722
2	Sasini	5.1366	0.3478	0.7669	0.1667
3	NMG	5.6925	1.9162	0.7461	0.3799
4	Standard Group	5.5480	0.1370	0.1725	0.2034
5	TPS	5.9398	(1.0049)	0.3345	0.2990
6	Scan Group	5.0985	0.3633	0.2483	0.0510
7	Safaricom	7.3646	11.7469	0.5790	15.4492
8	C & G	5.0704	0.7736	0.0847	0.0434
9	BBK	3.0883	0.0000	0.6764	0.0009
10	I & M	5.5350	(1.7162)	0.2365	0.1664
11	DTB	6.0009	0.0097	0.1422	0.3595
12	Housing	4.9048	(1.3645)	0.4401	0.0513
13	NBK	5.8157	1.3942	0.1091	0.3000
14	NIC	5.1697	0.6190	0.1337	0.1761
15	Equity	5.9587	(4.8089)	0.3853	1.5478
16	JHL	4.7635	0.4527	0.1975	0.0410
17	Pan African	4.4871	0.5228	0.4327	0.0233
18	Kenya re	4.3946	(2.5899)	0.1424	0.0152
19	CIC	5.0887	(1.0406)	0.1318	0.0466
20	Centum	3.9200	(0.2010)	-	0.0030
21	TCL	5.7135	(3.2371)	0.2247	0.4107
22	Mumias	6.2413	(0.3850)	0.3128	0.8863
23	EEAL	4.3706	0.0323	-	0.0239
24	ARM	6.5501	(9.1249)	0.2075	0.4030
25	BCL	6.2488	3.3034	0.7778	1.0960
26	CROWN	4.9807	0.7883	0.2485	0.0798
27	KENOL	5.8396	(12.1593)	0.7716	0.2140
28	TOTAL	6.1107	(5.9816)	0.0936	0.7366
29	KENGEN	7.1225	(48.2114)	0.4691	4.3282
30	KPLC	7.3364	(17.1851)	0.1574	3.7917

APPENDIX III: Data on Determinants that affect Investments of Firms

	YEAR	Net Capital Expenditure (Log NCE)	Free Cash Flows in Billions	DPR	Depreciation in Billions	Totals
Rea Vipingo	13	5.1244	0.4650	0.1493	0.1021	5.8408
	12	5.2212	0.2989	0.1735	0.0853	5.7789
	11	5.2393	0.3640	0.1027	0.0723	5.7784
	10	5.3781	(0.1743)	0.4464	0.0513	5.7016
	9	4.7051	0.2818	0.0806	0.0500	5.1175
		5.1336	0.2471	0.1905	0.0722	5.6434
Sasini Tea	13	5.3248	0.0698	0.4630	0.2109	6.0685
	12	5.2572	(0.1050)	2.5000	0.1700	7.8222
	11	5.1865	0.9910	0.5814	0.1750	6.9339
	10	5.2389	0.7191	0.1163	0.1617	6.2359
	9	4.6756	0.0640	0.1739	0.1158	5.0293
		5.1366	0.3478	0.7669	0.1667	6.4180
NMG	13	5.6064	5.0850	0.7463	0.4233	11.8610
	12	5.7979	1.4467	0.7519	0.3875	8.3840
	11	5.6598	1.2568	0.6299	0.3746	7.9211
	10	5.6699	0.9112	0.8188	0.3540	7.7539
	9	5.7286	0.8813	0.7835	0.3601	7.7535
		5.6925	1.9162	0.7461	0.3799	8.7347
Standard Group	13	5.7115	0.4175	0.2075	0.2775	6.6140
	12	5.3672	0.5515	-	0.2290	6.1476
	11	5.7065	(0.1040)	0.1689	0.2060	5.9775
	10	5.3325	0.0980	0.1475	0.1795	5.7576
	9	5.6223	(0.2780)	0.3385	0.1252	5.8079
		5.5480	0.1370	0.1725	0.2034	6.0609
TPS	13	5.7503	(0.4248)	0.3913	0.3882	6.1050
	12	6.0113	(1.1201)	0.3611	0.3037	5.5560
	11	6.0803	(1.3720)	0.2882	0.3308	5.3274
	10	6.3019	(1.0365)	0.2847	0.2576	5.8077
	9	5.5553	(1.0709)	0.3472	0.2146	5.0463
		5.9398	(1.0049)	0.3345	0.2990	5.5685
Scan Group	13	5.0504	0.3696	0.1481	-	5.5682
	12	5.4115	0.3497	0.2715	0.0993	6.1321
	11	5.0834	0.4221	0.2745	0.0709	5.8509
	10	5.4028	0.3945	0.2713	0.0569	6.1255
	9	4.5445	0.2805	0.2762	0.0277	5.1289
		5.0985	0.3633	0.2483	0.0510	5.7611
Safaricom Ltd	13	7.3958	11.4720	0.7045	19.9516	39.5239
	12	7.4028	4.9961	0.6875	17.0789	30.1653
	11	7.4062	14.6959	0.6061	15.5452	38.2534

	10	7.2414	18.3333	0.5263	13.3774	39.4784
	9	7.3769	9.2370	0.3704	11.2927	28.2770
		7.3646	11.7469	0.5790	15.4492	35.1396
C & G	13	4.8256	1.9198	0.0906	0.0492	6.8852
	12	5.0397	1.9769	0.0735	0.0501	7.1403
	11	5.7344	(0.4566)	0.0707	0.0479	5.3964
	10	4.9668	0.5607	0.1124	0.0380	5.6779
	9	4.7855	(0.1329)	0.0761	0.0317	4.7605
		5.0704	0.7736	0.0847	0.0434	5.9721
BBK	13	2.8169	0.0022	0.5000	0.0011	3.3202
	12	2.9380	(0.0033)	0.6211	0.0012	3.5571
	11	2.9890	(0.0026)	1.0067	0.0008	3.9939
	10	3.1427	0.0037	0.6974	0.0007	3.8446
	9	3.5547	0.0000	0.5568	0.0007	4.1123
		3.0883	0.0000	0.6764	0.0009	3.7656
I & M	13	5.3972	(7.2371)	0.2183	0.1796	(1.4420)
	12	5.5264	(0.8509)	0.1940	0.2563	5.1258
	11	5.4762	(0.3095)	0.2209	0.2001	5.5877
	10	5.3133	0.1087	0.2088	0.1053	5.7361
	9	5.9621	(0.2924)	0.3403	0.0905	6.1004
		5.5350	(1.7162)	0.2365	0.1664	4.2216
DTB	13	6.4845	0.2751	0.0972	0.4768	7.3336
	12	6.1000	0.5855	0.1089	0.4206	7.2150
	11	5.8236	(0.7224)	0.1252	0.3659	5.5923
	10	5.6420	0.4840	0.1370	0.3015	6.5644
	9	5.9546	(0.5739)	0.2426	0.2325	5.8558
		6.0009	0.0097	0.1422	0.3595	6.5122
Housing	13	5.8426	(3.1261)	0.4070	0.0687	3.1922
	12	4.8763	(1.0441)	0.4348	0.0603	4.3273
	11	4.9486	(0.0421)	0.4444	0.0495	5.4005
	10	4.7843	(1.1178)	0.4242	0.0414	4.1322
	9	4.0719	(1.4925)	0.4902	0.0365	3.1062
		4.9048	(1.3645)	0.4401	0.0513	4.0317
NBK	13	6.0938	1.5383	0.1422	0.3269	8.1013
	12	5.7947	0.5852	0.1342	0.3150	6.8291
	11	5.8258	0.8910	0.1254	0.3742	7.2163
	10	5.7740	2.3320	0.1435	0.2799	8.5295
	9	5.5904	1.6244	-	0.2039	7.4186
		5.8157	1.3942	0.1091	0.3000	7.6190
NIC	13	4.8881	(0.6052)	0.1634	0.2491	4.6954
	12	5.1207	(0.4014)	0.1658	0.2043	5.0895
	11	5.4872	1.9106	0.0744	0.1572	7.6293

	10	5.0088	1.1643	0.0988	0.1485	6.4203
	9	5.3435	1.0268	0.1661	0.1213	6.6578
		5.1697	0.6190	0.1337	0.1761	6.0985
Equity	13	5.6146	(16.4740)	0.3834	2.2032	(8.2728)
	12	6.2319	(4.5409)	0.4213	2.0282	4.1406
	11	5.7946	(0.0864)	0.3788	1.3387	7.4257
	10	5.7231	(0.6912)	0.3922	1.1329	6.5569
	9	6.4294	(2.2518)	0.3509	1.0357	5.5643
		5.9587	(4.8089)	0.3853	1.5478	3.0829
JHL	13	4.9975	0.8553	0.1842	0.0674	6.1044
	12	4.9825	0.7387	0.2000	0.0548	5.9759
	11	4.8286	0.3402	0.1667	0.0362	5.3716
	10	4.6014	0.6090	0.1719	0.0264	5.4086
	9	4.4077	(0.2797)	0.2647	0.0205	4.4132
		4.7635	0.4527	0.1975	0.0410	5.4548
Pan African	13	4.6433	0.9915	0.2299	0.0290	5.8936
	12	4.5965	0.4325	0.3200	0.0230	5.3720
	11	4.5482	0.4545	0.4329	0.0206	5.4563
	10	4.4053	0.5893	0.4886	0.0210	5.5041
	9	4.2422	0.1461	0.6920	0.0227	5.1031
		4.4871	0.5228	0.4327	0.0233	5.4658
Kenya Re	13	4.7434	(2.3761)	0.1399	0.0230	2.5301
	12	4.0869	(2.0407)	0.1000	0.0189	2.1652
	11	4.3099	(2.6316)	0.1097	0.0179	1.8059
	10	4.8441	(2.9991)	0.1362	0.0108	1.9920
	9	3.9887	(2.9020)	0.2262	0.0055	1.3185
		4.3946	(2.5899)	0.1424	0.0152	1.9623
CIC	13	5.8988	(1.8322)	0.1538	0.0831	4.3035
	12	4.8863	(1.3538)	0.1563	0.0498	3.7386
	11	5.0973	(1.1134)	0.1112	0.0458	4.1410
	10	4.6956	(0.3220)	0.0985	0.0319	4.5040
	9	4.8654	(0.5813)	0.1394	0.0224	4.4459
		5.0887	(1.0406)	0.1318	0.0466	4.2266
Centum	13	4.3540	(1.0363)	-	0.0051	3.3227
	12	3.6187	(0.0353)	-	0.0040	3.5874
	11	4.4346	(0.7483)	-	0.0028	3.6891
	10	4.0000	0.8846	-	0.0014	4.8860
	9	3.1928	(0.0694)	-	0.0018	3.1252
		3.9200	(0.2010)	-	0.0030	3.7221
TCL	13	5.8020	(3.6724)	0.3774	0.7094	3.2164
	12	6.1656	(3.2968)	0.2410	0.6302	3.7401
	11	5.1698	(2.9204)	0.2033	0.3227	2.7754

	10	5.7975	(3.1541)	0.1550	0.2217	3.0201
	9	5.6325	(3.1420)	0.1471	0.1693	2.8069
		5.7135	(3.2371)	0.2247	0.4107	3.1118
Mumias	13	6.0849	(2.8471)	-	1.1673	4.4051
	12	6.6427	0.5994	0.3817	0.9121	8.5358
	11	6.4162	1.9237	0.4132	0.8846	9.6378
	10	5.5272	(0.3594)	0.3883	0.8629	6.4190
	9	6.5353	(1.2416)	0.3810	0.6047	6.2793
		6.2413	(0.3850)	0.3128	0.8863	7.0554
EEAL	13	4.6372	0.0666	-	0.0212	4.7250
	12	3.8168	0.0917	-	0.0216	3.9301
	11	4.0553	(0.0975)	-	0.0265	3.9843
	10	4.6036	0.0460	-	0.0286	4.6782
	9	4.7399	0.0547	-	0.0217	4.8163
		4.3706	0.0323	-	0.0239	4.4268
	13	6.6579	(14.2604)	0.2190	0.6410	(6.7426)
ARM	12	6.4830	(12.8242)	0.1992	0.4248	(5.7172)
	11	6.6306	(8.0706)	0.1720	0.4122	(0.8559)
	10	6.5878	(6.5035)	0.2171	0.3152	0.6166
	9	6.3913	(3.9659)	0.2301	0.2217	2.8771
		6.5501	(9.1249)	0.2075	0.4030	(1.9644)
BCL	13	5.9614	1.0130	1.1518	1.4370	9.5633
	12	6.1055	1.8890	0.8381	1.2230	10.0556
	11	6.1258	4.1030	0.6925	1.1610	12.0823
	10	6.5352	2.4020	0.6063	0.9220	10.4654
	9	6.5160	7.1100	0.6004	0.7370	14.9634
		6.2488	3.3034	0.7778	1.0960	11.4260
CROWN	13	5.2796	0.9309	0.1738	0.0927	6.4770
	12	4.9832	0.5580	0.1710	0.0818	5.7940
	11	5.2220	0.8715	0.2298	0.0756	6.3989
	10	4.6387	0.7054	0.3247	0.0755	5.7442
	9	4.7797	0.8759	0.3434	0.0734	6.0724
		4.9807	0.7883	0.2485	0.0798	6.0973
KENOL	13	5.8975	(13.3250)	2.6316	0.2642	(4.5317)
	12	5.9315	(21.0177)	-	0.1877	(14.8984)
	11	6.0698	(15.5986)	0.4525	0.2263	(8.8499)
	10	5.7522	(10.0740)	0.4031	0.2045	(3.7141)
	9	5.5470	(0.7814)	0.3706	0.1873	5.3235
		5.8396	(12.1593)	0.7716	0.2140	(5.3342)
TOTAL	13	6.0712	(0.3434)	0.2885	0.9656	6.9819
	12	5.8338	(0.1608)	(0.6250)	0.9261	5.9742
	11	5.8353	(11.6703)	-	0.4168	(5.4181)

	10	5.8727	(4.3035)	-	0.9783	2.5476
	9	6.9405	(13.4301)	0.6173	0.3959	(5.4765)
		6.1107	(5.9816)	0.0561	0.7366	0.9218
KENGEN	13	7.5728	(61.4077)	0.2510	4.5306	(49.0533)
	12	6.9552	(51.8660)	0.4688	4.8484	(39.5937)
	11	7.2826	(56.2952)	0.5319	4.5498	(43.9308)
	10	7.1258	(52.0334)	0.5618	3.8291	(40.5167)
	9	6.6762	(19.4545)	0.5319	3.8831	(8.3633)
		7.1225	(48.2114)	0.4691	4.3282	(36.2915)
KPLC	13	7.6097	(38.6630)	-	5.6326	(25.4206)
	12	7.4173	(16.4703)	0.2119	4.5637	(4.2775)
	11	7.3929	(15.6337)	0.2083	3.8470	(4.1854)
	10	7.1349	(5.6439)	0.1703	2.7610	4.4223
	9	7.1273	(9.5147)	0.1963	2.1544	(0.0367)
		7.3364	(17.1851)	0.1574	3.7917	(5.8996)

Appendix IV: The Regression Results for the Relationship between Liquidity and Leverage

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
(Constant)	5.150	0.297		17.320	0.000	4.495	5.804					
FCF	0.635	0.271	2.011	2.345	0.039	0.039	1.231	0.707	0.577	0.435	0.047	21.394
DPR	-1.210	0.740	-0.345	-1.634	0.131	-2.839	0.420	0.032	-0.442	-0.303	0.772	1.295
Depreciation	-0.290	0.198	-1.223	-1.468	0.170	-0.725	0.145	0.644	-0.405	-0.272	0.050	20.189

a. Dependent Variable: NCE