

**A COMPARATIVE STUDY OF THE RETURNS OF QUOTED SIN AND NON
SIN STOCKS AT THE NAIROBI SECURITIES EXCHANGE**

BY

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DECLARATION

This research project is my original work and has not been submitted for the award of a degree in any other university.

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

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DEDICATION

I dedicate this work to my wife and children for their support during its preparation. Your patience and encouragement as I stayed away for long, either in class throughout the weekends, or in the field was really touching.

ACKNOWLEDGEMENT

A major research project like this is never the work of anyone alone. The contributions of many different people, in their different ways, have made this possible.

First, I would like to thank God for the wisdom and perseverance that HE has bestowed upon me during this research project, and indeed, throughout my life.

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LIST OF ABBREVIATIONS

APT	-	Arbitrage Pricing Model
BAT	-	British American Tobacco
CAPM	-	Capital Asset Pricing Model
CDSC	-	Central Depository and Settlement Corporation
CMA	-	Capital Market Authority
EABL	-	East African Breweries limited
NSE	-	Nairobi Securities Exchange
SRI	-	Socially Responsible Investment

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ABSTRACT

Sin stocks are of increased interest since more and more investors and fund managers avoid them while integrating social screening with their investment decisions. As a reflection of social norms, socially responsible investing has become a niche of its own in determining investors' portfolio decisions in the past decade.

The study adopted an explanatory research design with the population consisting of all firms listed in the NSE. The sample of the study consisted of the top 20 NSE firms. Coincidentally, there are two sin stocks in this index. Therefore, the study grouped 18 firms into the non sinstock category and another 2 firms (BAT and EABL) into the sinstock category. Secondary data used secondary data sources in gathering data for analysis which was done using the Statistical Package for Social Sciences (SPSS version 20) to generate the descriptive statistics and also to generate inferential results. T-Tests used to check whether the mean returns of Sin stock differ from the mean returns of non sin stocks.

Results on the analysis of variance (ANOVA) indicate that the overall model was significant as indicated by an F statistic of 4.904 and p value of 0.001. These results imply that the independent variables namely gearing ratio, log of total assets and log of profitability were satisfactory in comparing the returns of sinstocks and non sinstocks. Regression analysis results showed that the relationship between return and gearing ratio, size of the firm and profitability was positive which means that an increase in either of them would lead to a positive increase in return. However the variables were insignificant as their probability values were 0.178, 0.215 and 0.412 respectively which indicates that the variables were not the key determinants of return. Further comparative results, T-tests statistics indicate that sinstocks have higher capital gains, high expected return and dividends than in nonsinstocks. The study provides recommendations to investors who may want to choose on which stocks to invest in and to other researchers, who may want to contribute to the continuous debate of sin stocks returns and non sinstocks returns. Suggested area for further reading could one that compares the majority group of investors in both sin and non sin stocks in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Sinstocks is a term that describes companies which are engaged in irresponsible business practices or the production of harmful product such as alcohol, tobacco and gambling products (Berman, 2002 and Ahrens, 2004). Why is it interesting to study the behavior of sin stock returns over the business cycle? Sin stocks are usually discarded from many funds known as socially responsible. More and more investors avoid this vice based investing, because of social norms, or because of social, ethical, and environmental criteria. However there is no evidence that avoiding sin stocks leads to higher portfolio performance. It seems that investors include non-financial tastes in their investment decision. Are socially responsible investors also socially responsible consumers? Some people neglect sin stocks, but do they neglect sin products? Alcohol, tobacco and gambling are a particular class of products: their consumption constitutes an addictive behavior, considered as unhealthy, and they have no close substitute, which implies demand in elasticity. Addicted consumers continue to drink, smoke, or gamble, even if they don't invest in these sectors. Anecdotal evidence highlights the virtues of vice based investing.

A manager of the American vice Fund argues that “in aggregate, these (sin) industries are defensive in nature and have tended to outperform when the economy was stressed and the broad market was struggling”. Other evidence highlights the fact that people buy

cigarettes and alcohol regardless of economic conditions and political tensions (Money Management, 2006 and Waxler, 2004). Social norms are a significant “driving force” of individual behavior (Kubler, 2001). As a reflection of social norms, socially responsible investing has become a niche of its own in determining investors’ portfolio decisions in the past decade. Currently, there are over 200 socially-screened mutual funds, and approximately 10% of the total assets under management in the U.S. involve socially responsible investing (Social Investment Forum 2006). The scope of socially responsible investing varies from investing in morally and ethically sound companies (e.g., investing in environmentally conscious firms) to avoiding investments in companies that produce and market perceived unethical goods (e.g., tobacco, alcohol, or gaming products). In light of the growth of the socially responsible investment class, the neglect of a group of stocks called “sin stocks” (firms engaging in activities related to tobacco, gambling, and alcohol) has grown drastically in adherence to social norms and due to perceived higher business litigation risk and regulatory scrutiny

1.1.1 Stock Returns

The performance of a stock market of an economy is of interest to various parties including investors, capital markets, the stock exchange and government among others. Stock market performance is influenced by a number of factors key among them the activities of governments and the general performance of the economy. Economic activities do affect the performance of stock markets. Other factors that affect the stock market’s performance include, availability of other investments assets, change in composition of investors, and markets sentiments among other factors (Mendelson, 1976).

The day-of-the-week effect market anomaly, which the mean returns for each day of the week are different, has been well documented and tested for various developed stock markets (Aydogan and Booth, 2003; Yamori and Mourdoukow, 2003). However, less is known about the day of the week effect in the emerging and less developed markets. Most studies on the day-of-the-week effect have focused on the seasonal pattern of the mean return (Jaffe and Westerfield 1985). However, an investor should not only be concerned with expectations in asset returns, but also the variances of returns. Engle (1993) argues that risk-averse investors should reduce their investments in assets with higher return volatilities.

The day of the week effect in the financial market has been widely documented in the finance literature. Cross (1973) demonstrated empirically that Monday yields were lower than Friday ones for the S&P 500 Index. French (1980) reported similar results after comparing Monday, Friday and weekly average returns for the same index. He observed that Monday returns were lower than the average while Friday returns were greater than the average. Gibbons and Hess (1981) on a study of a sample of 30 stocks from the Dow Jones Industrial Index also concluded that Mondays resulted in negative returns.

1.1.2 The Effect of Portfolio Holding on Stock Returns

For decades, the truth about diversification has exerted a significant influence on the way investors managed their portfolios as well as finance researchers thought about portfolio theories and applications. Even among novices, the idea of not putting all eggs

in one basket has caused far-reaching societal and cultural responses toward their finances, which manifest themselves in the form of value investing and index fund products. Conventional wisdom, which needs no complex mathematical discourse, suggests that investors should widely diversify their holdings across stocks and industries to reduce their portfolios' idiosyncratic risk (Zhang, 2009).

Statman (1987) shows a well-diversified portfolio of randomly chosen stocks must include at least 30 stocks for a borrowing investor and 40 stocks for a lending investor. We could suspect that some institutional investors may over-diversify their portfolios. Goyal and Santa-Clara (2003) provides rational and irrational justifications for limited diversification. Transaction costs and taxes restrict the portfolio holdings of investors. Private information is another motive for holding large and undiversified position. Van Nieuwerburgh and Veldkamp (2005) argue that optimal under-diversification arises because of increasing returns to scale in learning.

The decision of whether to include a sin stock or a non sin stock in the portfolio also a diversification problem that can be addressed by looking at whether sin stocks outperform non sinstocks or whether they outperform the market. Therefore, a properly diversified portfolio should include both sin stocks and non sin stocks.

1.1.3 Sin Stocks

Sin stocks are of increased interest since more and more investors and fund managers avoid them while integrating social screening with their investment decisions. Socially responsible investment (SRI) combines investors' financial objectives with their concerns about social, environmental and ethical issues. Socially responsible investing

and avoiding investment in sin stocks are not always the same, but sin stocks are the most often negatively screened stocks by socially responsible investors. Hong and Kacperczyk (2007) study the performance of sin stocks on the American market. They find that sin stocks outperform the market due to the fact that they are less held by institutions subject to social norms, over the period 1965-2003. While gauging the relative importance of litigation risk versus this neglect effect, the authors find that litigation risk cannot explain the abnormal returns on sin stocks. Kim and Venkatachalam (2006) examine whether this neglect effect is attributable to differential information risk for these firms; i.e. sin stocks may possess greater information risk due to poor financial reporting quality. They show that sin firms' financial reporting quality is superior to a control group of firms, implying that the neglect by market participants is not attributable to financial reporting factors. It seems that, despite superior returns and higher financial reporting quality, investors are willing to pay a financial cost in order to comply with societal norms. The conclusion emerging from these US studies is that some investors reflect non financial tastes in their portfolio by neglecting sin stocks.

Social norms are important factors which may influence economic behaviors and outcomes. According to the Social Investment Forum (2007) report, socially responsible investment (SRI) is thriving in the US. About eleven percent of assets under professional management in the US are now involved in SRIs (Social Investment Forum, 2007). Sin stocks hold increasing interests since more and more investors and fund managers have begun to avoid them from their portfolio, due to concern about the social and ethical issues of investment decisions in this sector (Salaber, 2007).

Sin has been defined as “...the offence of breaking or the breaking of, a religious or moral law” (Cambridge Advance Learner’s Dictionary, 2003, p.1176). The definition of sin stocks may vary since the term has both universal and unique meanings. Hong and Kacperczyk (2005) identify sin stocks as being those stocks related to the tobacco, alcohol, and gaming industries. Socially responsible investors often view these stocks negatively, and this seems to be a universal opinion. On the other hand, the term sin stock may also have a unique meaning based on local traditions or religious convictions.

For example, Islamic people avoid investing in pork products due to religious principles (Statman, 2007) and Chinese people may avoid investing in stocks associated with the number four, as this number is viewed as being unlucky in Chinese culture and it’s pronunciation in Chinese is very similar to the phrase to die (Brown and Mitchell, 2008). Sinful has been defined as describing “...something which is very pleasant, but very bad for you” (Cambridge Advance Learner’s Dictionary, 2003, p.1176). It is of interest to investigate whether these meanings can be applied to the stock market, which indicates that sin stocks may have pleasant performance, but bad for the society.

There are a number of previous studies that have examined this interesting phenomenon. Hong and Kacperczyk (2005) study the performance of sin stocks on the US market, over the period from 1965 to 2003. They find that sin stocks outperform the market, as they are less likely to be held by norm-constrained institutions. Kim and Venkatachalam (2006) show that the US sin firm’s financial reporting quality is superior to that of the

control group of firms used in their study, implying that any neglect by market participants is not attributable to financial reporting factors. This finding also indicates that, despite superior returns and higher financial reporting quality, investors are willing to pay a financial cost in order to comply with societal norms. A more recent study by Salaber (2007) analyses the determinants of sin stock returns using data from 18 European countries over the period from 1975 to 2006. Results suggest that sin stock returns depend on both the legal and religious environments of each country.

1.1.4 Non Sin Stocks/Socially Responsible Investing Stocks

Does socially responsible investing (SRI) sacrifice investment returns to principles? The answer is no, according to studies published in peer-reviewed journals and elsewhere. The majority of the more than 50 studies on SRI performance find that the socially-aware approach fares just as well as non-SRI approaches (Brammer and Pavelin, 2006)

Reinforcing this conclusion are the track records of stock market indexes made up of companies screened by environmental, social and governance (ESG) criteria. The Domini 400 Social Index averaged 8.4% annually from 1990 to 2008, compared to 7.8% for the Standard & Poor's 500 Index over the same period. In Canada, the Jantzi Social Index averaged 2.4% annually from 2000 to 2008, compared to 2.8% for the S&P/TSX Composite Index (Bouten et al., 2012)

Some people might think an SRI should underperform because it places additional constraints on portfolio managers. It rules out companies that sell addictive or harmful products such as tobacco, alcohol, pornography, gambling games or weaponry. And it

directs investors to buy stakes in companies that: i) preserve the environment, ii) practice good employee relations, iii) do not violate human rights, iv) adhere to good governance, v) are sensitive to indigenous peoples and/or vi) enjoy good relations with their communities (Gray et al., 2001).

Socially responsible companies also face fewer of the costs and risks associated with class-action lawsuits, consumer boycotts, unfavorable government rulings or legislation and other risks arising from socially irresponsible actions. These are contingencies that usually don't show up in financial statements, yet they have the capacity to inflict sudden and dramatic setbacks in cost structures and profit opportunities - for example, if a court awards substantial compensation to plaintiffs or the government issues an edict imposing stricter emission controls (Cormier et al., 2004)

1.1.5 Returns of Sin and Non Sin Stocks

Understanding which views are borne out in reality is crucial for research that focuses on the implications of SRI for financial markets. On the theory side, researchers have shown that investors who pursue nonfinancial goals affect asset prices and returns differently compared to the traditional wealth-maximizing investor (e.g., Heinkel, Kraus, and Zechner (2001), Fama and French (2007), Statman, Fisher and Anginer (2008), and Hong and Kacperczyk (2009)). The “shunned-stock hypothesis” that follows from this logic predicts that socially controversial stocks have superior returns because they are shunned by values-driven investors who push their prices below fundamental value. In contrast, the “errors-in-expectations hypothesis” predicts that socially responsible stocks have higher risk-adjusted returns because the market is slow to recognize the positive impact that strong CSR practices have on companies’ expected

future cash flows (Edmans 2009). On the empirical side, an overwhelming body of research has tested these different predictions. Some evidence points out that socially controversial stock have earned anomalously positive returns, but other evidence suggests that stocks of companies with high scores on environmental and social responsibility issues outperform companies with low scores (Fama and French, 2007).

1.1.6 The Nairobi Securities Exchange

In Kenya dealing in shares and stock started in the 1920's when the country was still under the British colony. There was no formal market, no rules and no regulations to govern stock broking activities. Trading took place on gentlemen agreement in which standard commissions were charged with clients being obligated to honor their contractual commitments of making good delivery and settling relevant costs. At that time, stock broking was a sideline business conducted by accountants, auctioneers, estate time agents and lawyers who met to exchange price over a cup of coffee. This is because these firms were engaged in other areas of specialization, the need for association did not rise (www.nse.co.ke).

In 1951 an Estate Agent by the name of Francis Drummond established the first professional stock broking firm. They impressed upon Sir Ernest Vasey the idea of setting up a stock exchange in 1953 and the London Officials accepted to recognize the setting up of the Nairobi Stock Exchange (NSE) as an overseas stock exchange (Muga, 1974). The Nairobi Stock Exchange was constituted as a voluntary association of stock brokers registered under the societies Act in 1954. The dealing in shares was then

confined to the resident European community, since Africans and Asians were not permitted to trade in securities until after the attainment of independence in 1963.

The Nairobi stock exchange (NSE, 2011) was established in 1954 as a voluntary association of stock brokers with the objective to facilitate mobilization of resources to provide long term capital for financing investments. Through stringent listing requirements the market promotes higher standards of accounting, resource management and transparency in the management of business. The NSE is regulated by Capital Markets Authority (CMA, 2011) which provides surveillance for regulatory compliance. The exchange has continuously lobbied the government to create conducive policy framework to facilitate growth of the economy and the private sector to enhance growth of the stock market (Ngugi, 2005). The NSE is also supported by the Central Depository and Settlement Corporation (CDSC) which provides clearing, delivery and settlement services for securities traded at the Exchange. It oversees the conduct of Central Depository Agents comprised of stockbrokers and investments banks which are members of NSE and Custodians (CDSC, 2004). These regulatory frameworks are aimed to sustain a robust stock market exchange that supports a cogent and efficient allocation of capital allowing price discovery to take place freely based on the market forces. The changes in stock prices and the trend of changes have always been of interest in the capital market given their effect on the stock market stability and strategies adopted by investors (Wang, 2010). Understanding why prices move up and down is of critical importance to investors and from studies already undertaken there are various variables that drive stock prices.

There are two listed sinstocks in Kenya as at December 2011 namely British American Tobacco (BAT) and East African breweries (EABL). BAT manufactures and distributes cigarettes (which contain harmful ingredients) while the other company (EABL) deals with the brewing and distribution of alcohol. The other 48 firms are concerned with activities that are socially responsible.

1.2 Research Problem

Stocks of companies involved in producing tobacco, alcohol and gaming are usually called sin stocks. These stocks are of increased interest since more and more investors and fund managers avoid them while integrating social screening with their investment decisions. This implies that there are significant perceptions that influence the decision of whether to invest or not to invest in a sin stock. Empirical studies have also shown that sin stocks outperform the market. Understanding the behavior of sin stocks is therefore important from the point of view of shareholders/investors and speculators. In particular, the two sin stocks in Kenya, British American Tobacco (BAT) and East African Breweries limited (EABL) have won the investors' confidence by paying very high dividends, issuing bonus shares and having several stock splits. This trend raises two research problems; are BAT and EABL neglected by socially responsible investors? Does the available data prove that sin stocks outperform the non sin stocks?

Global literature on sin stocks has originated various results. Hong and Kacperczyk (2007) study the performance of sin stocks on the American market indicated that sin

stocks outperform the market due to the fact that they are less held by institutions subject to social norms. While gauging the relative importance of litigation risk versus this neglect effect, the authors find that litigation risk cannot explain the abnormal returns on sin stocks. Kim and Venkatachalam (2006) examine whether this neglect effect is attributable to differential information risk for these firms; and concluded that sin stock exhibit high financial reporting quality. Hence, one cannot attribute the neglect effect to the financial reporting quality. Results by Salaber (2007) suggest that sin stock returns depend on both the legal and religious environments of each country. However, global studies offer differing opinions as to the factors that influence the neglect of sin stocks as well as the reasons behind the tendency of sin stocks to outperform the market.

Local studies on the area of sins stocks have been inadequate. For instance, Ngacha (2009) conducted a comparative study on performance between value & growth stocks at the NSE. Rajab (2009) conducted a study on the effect of IPOs on the performance of other stocks at the NSEs. Pudha (2010) investigated the factors that motivate local individual investors to invest in shares of companies quoted at the NSE. Waringa (2008) assessed the factors influencing fund manager's investment decisions on ordinary shares at Nairobi stock exchange. Murigi (2008) conducted an investigation of the effect of Kenyan elections in the returns of stocks at the NSE. Kagunda (2010) conducted a comparison of performance between unit trusts and a market portfolio of shares at NSE. However, the identified studies failed to investigate and compare the performance of sin and non sin stocks. The research question therefore is; Do sin stocks outperform non sin stocks in Kenyan stock market?

1.3 Objective of Study

To establish whether stock returns of sin stocks outperform non sinstocks

1.4 Value of the Study

The study may have implications for theory and practice and policy. The theoretical value of the study may be derived from its contribution to the continuing debate of sin stock returns. The discussion of perception of investors towards sin stock may also be a relevant contribution to the overall theoretical framework. Overall, the study will develop a model after scanning literature and validate this conceptual model through a rigorous research methodology.

The study may be valuable to practice. The study will also benefit the companies themselves in strategic planning. To the investors who invest in financial counters, the share performance, specifically in terms of profitability, liquidity and leverage, provide an insight into the risk and return trade-off that they are exposed to. Investors may use the study to discern the sin stocks returns from the non sin stocks.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter explored the literature that focuses on a comparative study of the returns of quoted sin and non sin stocks at the Nairobi securities exchange. The chapter commenced by reviewing the theories that informed the discussion on sin and non sin stocks. It then dwelt on the empirical studies that discuss the link between sin and non sin stocks and Nairobi securities exchange.

2.2 Theoretical Review

This subsection presented the theories that guide the dependent and independent variables as far sinstocks were concerned. Discrimination Theories explain why sin stocks are avoided. The capital asset model explains the risk element in sinstocks and its effect the value.

2.2.1 Discrimination Theories

There are two leading theories of discrimination. The first theory is based on tastes and originates with Gary and Becker (1957). In the taste-based story, some economic actors prefer not to interact with a particular class of people and are willing to pay a financial price to avoid such interactions. The other leading explanation is based on incomplete information. The simplest information-based model involves one group having mistaken beliefs about another group's skill level and acting accordingly. That simple model,

while perhaps a reasonable description of behavior is not a very satisfying economic model because it implies that individuals are making systematic errors. A series of more sophisticated information-based statistical discrimination Models circumvent that criticism. In these models, individuals (typically employers) discriminate against particular groups because either (1) signals of ability are less informative within that group or (2) in the presence of human capital investment, equilibria exist in which negative prior beliefs about members of a particular group become self-fulfilling. In models of statistical discrimination, economic actors have no animus (unlike taste-based models), but discriminatory outcomes nonetheless arise. Measuring the extent of discrimination poses a difficult empirical challenge. Self-reported data are unlikely to accurately reflect attitudes if there is a perceived stigma attached to racist views. A number of different approaches have been employed in an attempt to address this question. One method, known as the “audit study,” uses matched pairs of individuals of different races who masquerade as consumers or job hunters.

The discrimination theory was relevant as it explains the concept of why investors prefer sin stocks and why others prefer non sin stocks. Investors who are morally conscious would rather avoid investing in sin stocks even sinstocks post a higher return than non sinstocks.

2.2.2 Modern Portfolio Theory (MPT)

Markowitz (1952) introduced the Modern portfolio Theory (MPT) that explores how risk-averse investors can construct optimal portfolios taking into consideration the trade-off between market risk and expected returns. His theory quantifies the benefits of

diversification, and shows that out of a universe of risky assets, an efficient frontier of optimal portfolios can be constructed. Each portfolio on the efficient frontier offers the maximum possible expected return for a given level of risk and Investors hold one of the optimal portfolios on the efficient frontier as they adjust their total market risk by leveraging or de leveraging that portfolio with positions in the risk-free asset such as government bonds. MPT provides a broad context for understanding the interactions of systematic risk and reward which has profoundly shaped how institutional portfolios are managed, and motivated the use of passive investment management strategies

Markowitz model is a single- period approach, which assumes that an investor has a given initial endowment to invest. The investment will be held for a specific length of time referred to as the investor's holding period. At the end of that period, the investor will liquidate his holdings and will either re-invest it or use it for his own consumption needs (or a combination of both) i.e. a fixed mix or a buy-and-hold strategy. Thus

$$\text{Return} = (\text{end of period accumulated wealth less starting period wealth}) / \text{starting period wealth}$$

The theory is relevant to the study of sin stocks because it explains the concept of diversification. The concept of diversification is important when an investor is faced by the two types of securities, sin stocks and non sinstocks.

2.2.3 The Capital Asset Pricing Model

The Capital Asset Pricing Model was formulated by Sharpe, Mossin and Litner independently. However, Sharpe (1964) formalized the Capital Asset Pricing Model (CAPM). The model makes strong assumptions that lead to interesting conclusions. Not only does the market portfolio sit on the efficient frontier, but it is actually Tobin's super-efficient portfolio. According to CAPM, all investors should hold the market portfolio, leveraged or de-leveraged with positions in the risk-free asset. CAPM also introduced beta and relates an asset's expected return to its beta.

The risk and return model that has been in use the longest and is still the standard in most real world analyses is the Capital Asset Pricing Model. There are several assumptions made by the model. While diversification reduces the exposure of investors to firm specific risk, most investors limit their diversification to holding only a few assets. Even large mutual funds rarely hold more than a few hundred stocks and many of them hold as few as ten to twenty. There are two reasons why investors stop diversifying. One is that an investor or mutual fund manager can obtain most of the benefits of diversification from a relatively small portfolio, because the marginal benefits of diversification become smaller as the portfolio gets more diversified. Consequently, these benefits may not cover the marginal costs of diversification, which include transactions and monitoring costs. Another reason for limiting diversification is that many investors and fund managers believe they can find undervalued assets and thus choose not to hold those assets that they believe to be fairly or overvalued. The capital asset pricing model assumes that there are no transactions costs, all assets are traded and investments are infinitely divisible (i.e., you can buy any fraction of a unit of

the asset). It also assumes that everyone has access to the same information and that investors therefore cannot find under or overvalued assets in the market place. Making these assumptions allows investors to keep diversifying without additional cost. At the limit, their portfolios will not only include every traded asset in the market but will have identical weights on risky assets. The fact that this diversified portfolio includes all traded assets in the market is the reason it is called the market portfolio, which should not be a surprising result, given the benefits of diversification and the absence of transactions costs in the capital asset pricing model. If diversification reduces exposure to firm-specific risk and there are no costs associated with adding more assets to the portfolio, the logical limit to diversification is to hold a small proportion of every traded asset in the market.

The CAPM Theory is relevant since it acknowledges the risk element in sinstocks. Consequently, the higher expected return in sinstocks is as a result of the higher risk.

2.2.4 The Arbitrage Pricing Theory (APT)

The Arbitrage Pricing Theory (APT) is a model of financial instruments and portfolio behavior based on the proposition that if the returns of a portfolio of assets can be described by a factor structure or model, the expected return of each asset in the portfolio can be described by a linear combination of the factors with the returns of the asset. The factors can be statistical artifacts; they can be market or industry related; or they can be macroeconomic variables such as interest rates, inflation, industrial production, etc.

The Arbitrage Pricing Theory (APT) is relevant to the current study since it outlines the fact that the returns of both sinstocks and non sinstocks can be estimated from a set of linear factors. The theory is an improvement from CAPM as CAPM states that the only determinant of the return of an asset is its risk. APT stipulates that risk is just one of the many factors.

2.2.5 Fama French Three Factor Model

The Fama French Three Factor Model is an improvement from the APT Model. The model was originated by Fama and French (1993). In their paper, two “mimicking” portfolios were constructed for firm size and book-to-market ratio besides the market portfolio to test a three-factor model. The benefit of this approach is that it allows for direct test of the multifactor model using time series regressions where both dependent and independent variables are portfolio returns.

The Fama French Three Factor Model is relevant to the study of sinstocks as it acknowledges that the return of both sin stocks and non sinstocks is a function of the risk and two other factors, namely firm size and book-to-market ratio.

2.3 Measuring Performance of Sin Stocks and Non Sinstocks

After the extreme ups and downs of financial markets during the past decade, boards of directors, senior managers, and investors are rethinking the way they define and assess corporate performance. There's nothing wrong with good accounting results and rising share prices, but they don't necessarily indicate whether a company is fundamentally healthy, in the sense of being able to sustain its current performance and to build profitable businesses in the future (Dobbs and Kolley, 2005).

Nonetheless, a company can construct a comprehensive performance assessment that measures the value it has created and estimates its ability to create more. As a way of judging how well a company is doing, such an assessment is far superior to any single performance metric. It can also help management to balance the short- and long-term creation of value and board members and investors to determine whether management's policies and the company's share price are on target. A company's cash flow and, ultimately, its market value stem from its long-term growth in revenues and profits and from its returns on invested capital (ROIC) relative to its cost of capital. A discounted-cash-flow (DCF) analysis, based on projected performance, can be linked to key performance and health indicators in order to demonstrate the links between shareholder value, as measured by stock markets, and the drivers of value (McKinsey Quarterly,2005).

With these links in mind, it is possible to organize performance measurement according to three different perspectives. The economic value that a company has created historically can be explored through its financial statements. This set of metrics gauges what we call a company's performance. Metrics can also gauge a company's ability to create economic value in the future and the risks that might prevent it from doing so. These metrics assess what we call the company's health. The third set of metrics assesses the capital market performance of the company, including the expectations factored into its share price and the way they have changed, as well as a comparison between a company's market valuation and its valuation on the basis of its business plans. An understanding of its performance and health provides the context for

developing this accurate assessment of its share price performance (Dobbs and Kolley, 2005).

Some ways of measuring a company's financial performance are better than others. Metrics, such as ROIC, economic profit, and growth, that can be linked directly to value creation are more meaningful than traditional accounting metrics like EPS. Although growing companies that earn an ROIC greater than their cost of capital generate attractive EPS growth, the inverse isn't true: EPS growth can come from heavy investment or changes in financial structure that don't create value. In fact, companies can easily manipulate EPS—by repurchasing shares or undertaking acquisitions (McKinsey Quarterly, 2005).

There are three sets of performance measurement tools to assist with portfolio evaluations. The Treynor, Sharpe and Jensen ratios combine risk and return performance into a single value, but each is slightly different. Treynor introduced the concept of the security market line, which defines the relationship between portfolio returns and market rates of returns, whereby the slope of the line measures the relative volatility between the portfolio and the market (as represented by beta). The beta coefficient is simply the volatility measure of a stock portfolio to the market itself. The greater the line's slope, the better the risk-return tradeoff. The higher the Treynor measure, the better the portfolio (Pareto, 2012).

The Sharpe ratio is almost identical to the Treynor measure, except that the risk measure is the standard deviation of the portfolio instead of considering only the systematic risk, as represented by beta. Conceived by Bill Sharpe, this measure closely follows his work

on the capital asset pricing model (CAPM) and by extension uses total risk to compare portfolios to the capital market line. Unlike the Treynor measure, the Sharpe ratio evaluates the portfolio manager on the basis of both rate of return and diversification (as it considers total portfolio risk as measured by standard deviation in its denominator). Therefore, the Sharpe ratio is more appropriate for well diversified portfolios, because it more accurately takes into account the risks of the portfolio.

Like the previous performance measures discussed, the Jensen measure is also based on CAPM. Named after its creator, Michael C. Jensen, the Jensen measure calculates the excess return that a portfolio generates over its expected return. This measure of return is also known as alpha. The Jensen ratio measures how much of the portfolio's rate of return is attributable to the manager's ability to deliver above-average returns, adjusted for market risk. The higher the ratio, the better the risk-adjusted returns. A portfolio with a consistently positive excess return will have a positive alpha, while a portfolio with a consistently negative excess return will have a negative alpha. The Jensen measure requires the use of a different risk-free rate of return for each time interval considered. So, let's say you wanted to evaluate the performance of a fund manager for a five-year period using annual intervals; you would have to also examine the fund's annual returns minus the risk-free return for each year and relate it to the annual return on the market portfolio, minus the same risk-free rate. Conversely, the Treynor and Sharpe ratios examine average returns for the *total period* under consideration for all variables in the formula (the portfolio, market and risk-free asset). Like the Treynor measure, however, Jensen's alpha calculates risk premiums in terms of beta (systematic, undiversifiable

risk) and therefore assumes the portfolio is already adequately diversified. As a result, this ratio is best applied with diversified portfolios, like mutual funds (Pareto, 2012).

Empirical studies have in general shown that socially controversial stocks tend to outperform the market over time (Fabozzi, Ma, and Oliphant, 2008; Statman and Glushkv, 2009) and are cheap relative to comparable firms (Hong and Kacperczyk, 2009). To examine the impact of social norms on the aggregate holdings and investment decisions of retail investors, recent studies have examined both the performance and flow-performance relationship of socially responsible investment (SRI) mutual funds versus non-SRI mutual funds. In the U.S., studies are mixed and inconclusive. In general, the average alphas of SRI and non-SRI funds using risk-adjusted models tend to be insignificant (Hamilton, Joe, and Statman, 1993; Statman, 2000; Statman, 2006). Fund flows in socially responsible funds are less sensitive to past returns than for conventional funds (Bollen, 2007; Benson and Humphrey, 2008; Renneboog, Horst, and Zhang, 2011).

2.4 Empirical Studies

Kim and Venkatachalam (2006) also found superior performance for the 111 sinstocks they analyzed, but concluded that the sin stocks' superior performance was due to a high quality of financial reporting that made them attractive to a wide group of investors and analysts. Both of these studies focused on U.S. publicly traded stocks. In contrast, Salaber (2007) investigated sin stocks in three industries in 18 European countries. She found that sin stock returns depend on legal and cultural characteristics, such as religious preference, level of excise taxation, and degree of litigation risk; for example,

Protestants tend to be more “sin averse” than Catholics and require a significant premium for investing in sin stocks.

Hong and Kacperczyk (2007), in the first draft of their article released in June 2005, analyzed the impact of society’s framework of morals and traditional laws on the sin stock market. They hypothesized that sin stocks in the U.S. Market are followed less frequently by institutional investors and analysts than the stocks of other companies for one or both of the following reasons: sin companies face greater litigation risk and/or they are neglected because of social norms. Hong and Kacperczyk (2007) found that their sample of 184 sin stock (in the gaming, tobacco, and alcohol industries) outperformed the market on a relative basis after taking into account well-known predictors of stock returns, and that the outperformance was more attributable to the neglect effect than to litigation risk.

Hong and Kacperczyk (2007) conducted a study on the effects of social norms on markets by studying “sin” stocks—publicly traded companies involved in producing alcohol, tobacco, and gaming. The authors hypothesized that there is a societal norm against funding operations that promote vice and that some investors, particularly institutions subject to norms, pay a financial cost in abstaining from these stocks. Consistent with this hypothesis, the authors found that sin stocks are less held by norm-constrained institutions such as pension plans as compared to mutual or hedge funds that are natural arbitrageurs, and they receive less coverage from analysts than stocks of

otherwise comparable characteristics. Sin stocks also have higher expected returns than otherwise comparable stocks, consistent with them being neglected by norm-constrained investors and facing greater litigation risk heightened by social norms. Evidence from corporate financing decisions and time variation in norms for tobacco also suggests that norms affect stock prices and returns.

Salaber (2007) investigated sin stocks in three industries in 18 European countries. She found that sin stock returns depend on legal and cultural characteristics, such as religious preference, level of excise taxation, and degree of litigation risk; for example, Protestants tend to be more “sin averse” than Catholics and require a significant premium for investing in sin stocks

Statman, Fisher, and Anginer (2008) tested a heuristic model which includes a subjective risk factor. The expected return is determined by the subjective feeling or the preference of investors. To measure the affect of stocks, they used *Fortune Magazine* respondents’ subjective preference rating of admired versus spurned stocks. They found evidence that the returns of admired stocks are lower than the returns of spurned stocks. They also hypothesized that the positive effect of a stock could be attributed to the prestige or social responsibility associated with that firm, and that the negative effect of a stock could result from the perception that the company does not conform to social values. As such, a sin stock has a high level of subjective risk and thus requires a higher expected return.

Kritzman and Myrgren, page (2008) examined the cost of social responsibility or virtues. The authors found that a cost is associated with having principles. The cost argument asserts that there is a positive economic cost to uphold and execute social values in economic activities. The first layer of cost is at the firm level; production processes which are friendly or “sustainable” to the environment are not cheap at either the early stage of research and development or at the stage of execution. Furthermore, explicit out-of-pocket corporate expenses are required to maintain conformity with social standards, such as defective warning disclosures, product recalls, pollution control, environmental cleanup, and so on. In anticipation of possible deviations from future social standards, firms often insure themselves against product liability lawsuits.

Adler and Kritzman (2008) found that a second layer of cost, at the stock level, is a subtle cost that takes the form of underperformance, which results from investors’ values constraining their investable universe. Economic intuition suggests that if an optimal portfolio is obtained under the mean-variance framework from a sub universe that has been screened by any constraints, it will underperform, on a risk-adjusted basis, a portfolio without constraints. In this case, if sin stocks are removed from the investable universe, the resulting portfolios should generate lower returns. By definition, the stocks excluded will earn higher returns. Dukes (2008) found that the most likely reason for not investing in sin stocks is “because investors who are willing, or allowed, to bear the social cost. Market pricing is not only determined by traditional risk and return measures, but more appropriately, by firm- specific factors and changes in social values.

Aziza (2011) investigated the performance of islamically screened portfolios at the Nairobi Stock Exchange. The study used the companies in the main market segment of the NSE which were 47 as at 31stDecember 2010. These companies were islamically screened in order to come up with an Islamic portfolio. Any company that did not meet a given screen was left out of the portfolio. 22 companies were left out of the Islamic portfolio leaving 25 companies to form the Islamic portfolio. Five companies were dropped from the Islamic portfolio in order to have the conventional and Islamic portfolios carry the same number of companies. KenolKobil was left out as the company had a stocks split during the period. Four other companies having the lowest return were also left out. The NSE 20 Share Index acted as a benchmark for the Islamic portfolio. Results showed that there was no significant difference between the risk and raw returns of the conventional portfolio and Islamic portfolio. The results for risk adjusted returns were mixed; the Sharpe measure was in favour of the Islamic portfolio while the Treynor ratio was in favour of the conventional portfolio, both with significant differences. The Jensen measure was however indifferent.

Iraya and Musyoki (2013) investigated the Performance of Socially Screened Portfolio at the Nairobi Securities Exchange. Two portfolios were formulated each comprised of 20 firms. One comprised of the NSE 20-share index firms and the second comprised 20 firms that passed the negative screening criterion that was employed. The descriptive research design approach was used. The target population was all the firms listed at the NSE. The risk adjusted returns were computed using the Sharpe index. Monthly and annual returns were calculated for years 2007 - 2011. F and T-tests were used to determine whether there was significant difference between the risk adjusted returns of

the two portfolios. The NSE-20 portfolio had a higher average Sharpe ratio than the social screened portfolio hence it outperformed the Socially Screened Portfolio when compared in terms of risk adjusted returns. The study concludes that social screening results in reduced portfolio performance.

2.5 Summary of Literature Review

Kumar and Page (2011) examine whether institutional investors deviate from established norms when the perceived benefits are sufficiently large and find that when gambling and sin averse institutions invest in lottery-type stocks and sin stocks, they earn higher abnormal returns on these stocks. However, all these studies examine investment behavior and its relation with social norms in the aggregate by focusing on either mutual fund or stock returns. Very few studies have focused on the characteristics, preferences, and expectations of household investment decisions subject to social norms. Exceptions include a study by Rosen, Sandler, and Shani (1991), which uses a mail survey of individual investors of socially responsible funds. They find that socially responsible investors tend to be younger, better educated, but less affluent than the general mutual fund population. Salaber (2007) examines how sin stock returns vary across 18 European countries based on cultural and legal characteristics and finds that Protestants tend to be more averse to investing in sin stocks than Catholics. The scarcity of studies that examine investor behavior and social norms at the household level is the motivation behind this paper. In addition, no comparative study focusing on the sinstocks quoted on the NSE exist. The only studies which were closely related to the study were by Aziza (2011) and Iraya and Musyoki(2013) which focused on socially responsible screened stocks. However, this study deviates from Aziza (2011) and Iraya

and Musyoki (2013) by focusing on sinstocks which is a slightly different concept from islamically screened stocks (Aziza, 2011) and from socially screened stocks (Iraya and Musyoki, 2013). This study intended to concentrate on a subset of socially screened stocks (sinstocks) as opposed to studying the whole set of socially screened stocks.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed the type of research design, population, and target population, sampling frame, sample, sample size, sampling technique, instruments to be used, pilot test and data analysis.

3.2 Research Design

Research design refers to how data collection and analysis are structured in order to meet the research objectives through empirical evidence economically (Chandran, 2004; Cooper and Schindler, 2006).

This study was conducted using explanatory research design. According to Mugenda and Mugenda (2003), explanatory research explores the relationship between variables, that is, the effect of one thing on another and more specifically, the effect of one variable on another. Mugenda and Mugenda contends that explanatory research has the advantage of being relatively cheap and the same was considered for the study so as to establish the returns of quoted sin and non sin stocks at the Nairobi securities exchange (NSE).

3.3 Population

A population refers to an entire group of individuals, events or objects having a common observable characteristic (Mugenda & Mugenda, 2003). A population of 58 firms listed at the NSE as at December 2012 was taken and the same is provided at appendix II.

3.4 Sample

A sampling frame is a list of population from which a sample was drawn (Leary, 2001). It is the source material or device from which list of all elements within a population that can be sampled is drawn.

The sample of the study involves the 20 firm that make up the NSE index. Coincidentally, there are two sin stocks in the index. Therefore, the study grouped 18 firms into the non sin stock category and another 2 firms (BAT and EABL) into the sin stock category. The use of 20 firms was justified as similar studies by Aziza (2011) and Iraya and Musyoki (2013) use the NSE as a benchmark.

3.5 Data Collection

The study used secondary data sources in gathering data for analysis. Secondary data involves analysis of the firms' annual stock market prices for 5 years from 2007 to 2011. The specific secondary data collected from NSE Handbook 2011 and returns will be returns measured as:

$$Returns = \sum_1^5 \left(\frac{price_t - price_{(t-1)}}{price_{(t-1)}} \right) + D_t$$

D_t = Dividend

Price $_t$ = Stock Price in time $_t$

Price $_{(t-1)}$ = Stock Price in time $_{t-1}$

3.6 Data Analysis

The research used averages in this study. Statistical Package for Social Sciences (SPSS version 17) was used to generate the descriptive statistics and also to generate inferential results. T-Tests used to check whether the mean returns of Sin stock differ from the mean returns of non sin stocks.

3.6.1 Analytical Model

Multiple regression analysis was used to establish the effect of the independent variables on the dependent variables.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

Where;

Y = Returns

X_1 = Gearing Ratio as measured by Non Current Liabilities/Total Financing

X_2 = Size of the firm as measured by the log of Total Assets

X_3 = log of profitability

X_4 = Dummy for being sin stock (1), non sin stock (0)

In the model, α = the constant term while the coefficient $\beta_i = 1 \dots 4$ was used to measure the sensitivity of the dependent variable (Y) to unit change in the predictor variables. μ is the error term which captures the unexplained variations in the model. In its complete form, the model will be;

$$\text{Returns} = \alpha + \beta_1 \text{Gearing Ratio} + \beta_2 \text{Size of the firm} + \beta_3 \text{Profitability} + \beta_4 \text{Dummy for being in stock} + \mu$$

The strength of the independent variables was tested at a p value of 0.05. This implies that independent variables with a p value of less than 0.05 were declared to have a significant effect on the returns.

CHAPTER FOUR

FINDINGS, RESULTS AND DISCUSSION

4.1 Introduction

The chapter presents the results and discussion of the study. The purpose of this study was to compare the returns of sin-stocks and non-sin stocks at the Nairobi securities exchange. The descriptive statistics were presented first followed then the trends and regression analysis was done to get the correlation and analysis of variance.

4.2 Descriptive Statistics

This section analyses the descriptive results of the study, measures of central tendency and the trends of the variables that is capital gain, dividend, log of profitability, log of total assets and return in sinstocks and non sinstocks firms.

4.2.1 Measures of Central Tendency

Results in table 4.1 indicate that the firms under the study had a mean return of -0.146 with a standard deviation of 0.4161. The capital gain showed the firms under study had a mean of -0.193 with a standard deviation of 0.4249 while the mean dividend was 4.03 with a standard deviation of 2.219.

The size of the firm represented by log of total assets presented the firms under the study have an average size as of 16.61 with a standard deviation of 1.876. From the results

real estate's firms had an average mean profitability of 14.534 with a standard deviation of 1.558 while average debt of the firms represented by gearing ratio was 0.399 with a standard deviation of 0.3024.

Table 4. 1: Descriptive Statistics

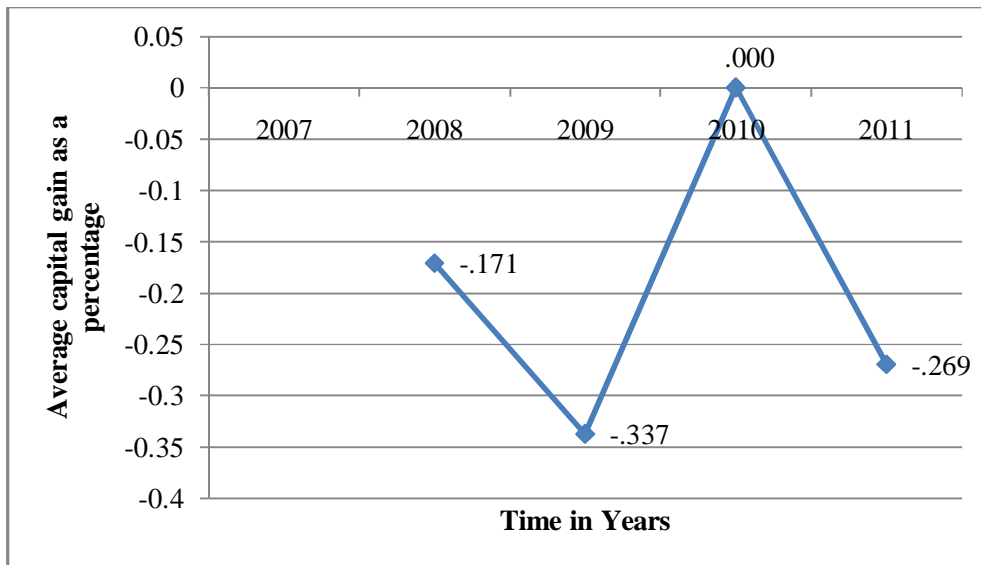
	Mean	Std. Deviation
Return	-0.146	0.4161
Capital gain	-0.193	0.4249
Dividends	4.03	2.219
Log of total assets	16.612	1.8768
Log of profitability	14.534	1.5582
Gearing ratio	0.399	0.3024

Source: Researcher 2013

4.2.2 Annual Trends for Returns

The trend analysis of capital gains represented by figure 4.1 shows that there was a decrease in capital gains from 2008 to 2009 with a slight increase in year 2010 and a decrease in year 2011.

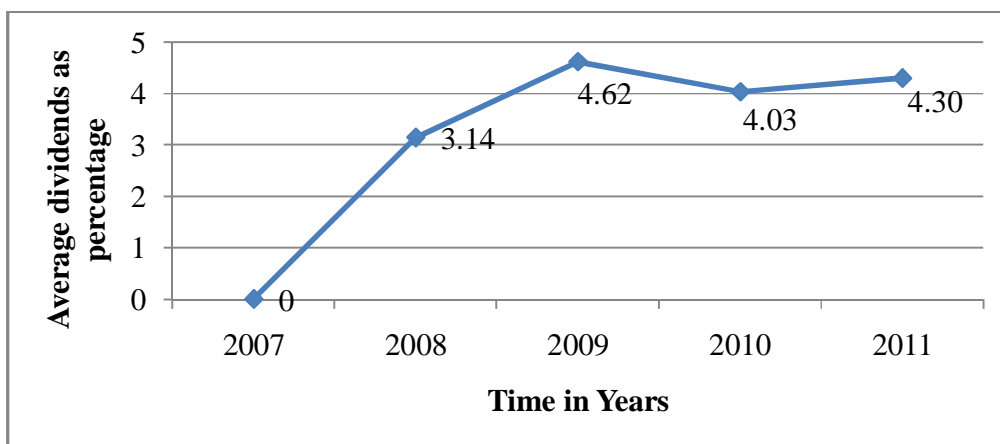
Figure 4.1: Trend Analysis in Capital Gain



Source: Researcher 2013

The trend analysis of dividends represented by figure 4.2 shows that there was a high increase in dividends from 2007 to 2009 with a slight decline in 2009 to 2010, and an increase thereafter in period 2010 to 2011.

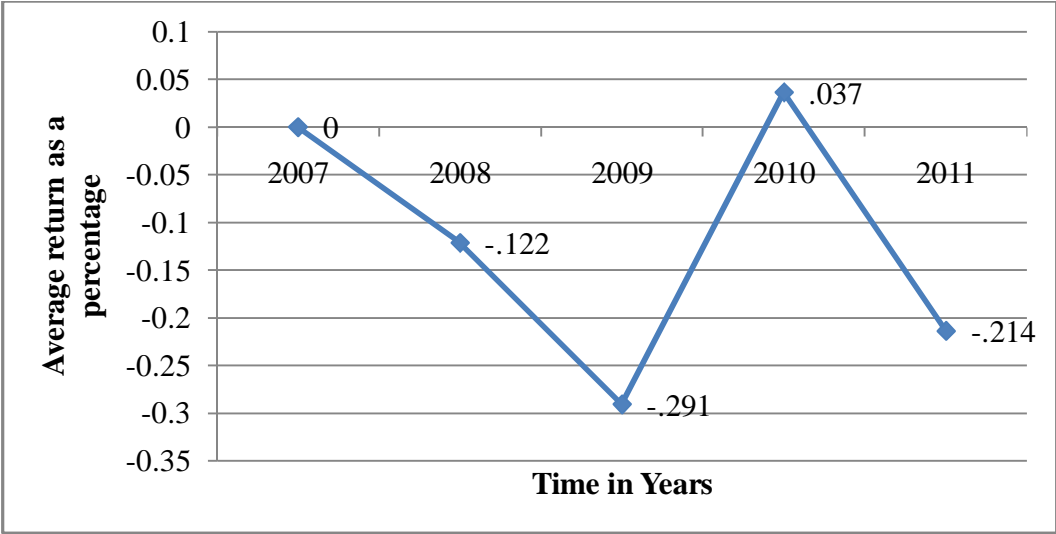
Figure 4. 1: Trend Analysis in Dividends



Source: Researcher 2013

Figure 4.3 represents trend analysis in return of sin stock and nonsinstocks which recorded a considerable decrease from year 2007 to 2008, later a steady increase in returns in 2009 to 2010, whereby a decline followed from 2010 to 2011.

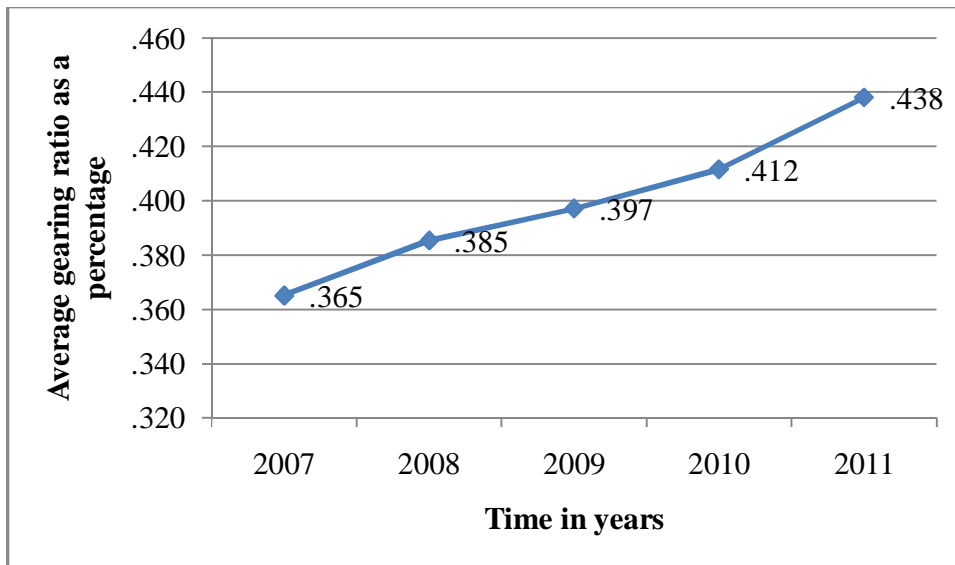
Figure 4.3: Trend Analysis in Return



Source: Researcher 2013

Results in figure 4.4 represent the trend in gearing ratio shows that there has been a steady increase from year 2007 to 2011 which means that the companies having been using debt as a source of financing.

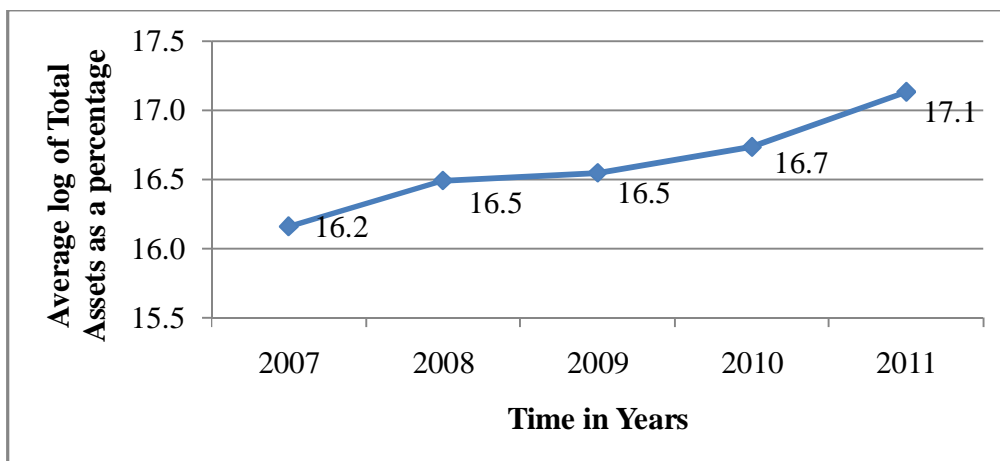
Figure 2.4: Trend Analysis in Gearing Ratio



Source: Researcher 2013

The trend in log of total assets representing the size of the firm as shown in figure 4.5, steadily increases in year 2007 to 2008 with a constant growth between years 2008 to 2009. Later on a steady increase is recorded from year 2010 to 2011.

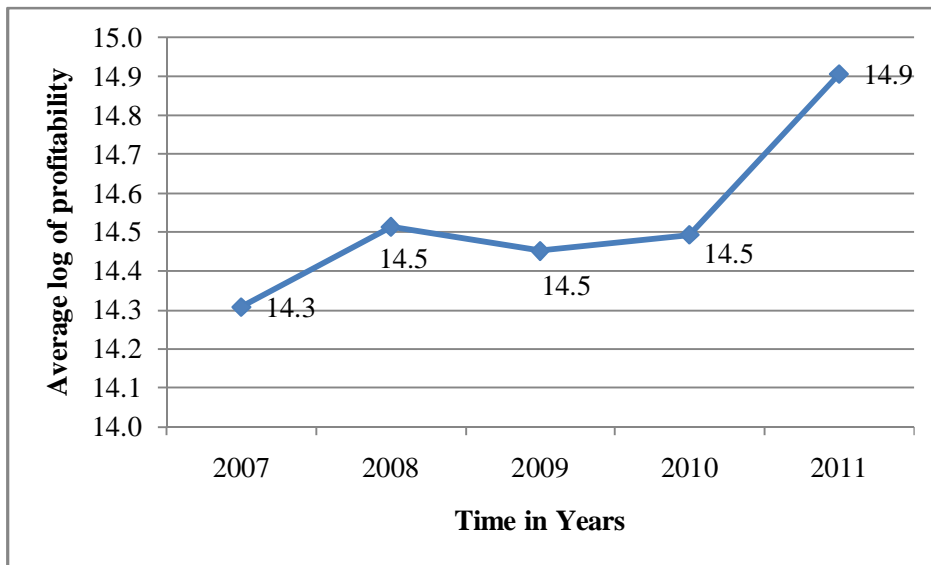
Figure 4.5: Trend analysis in Log of Total Assets



Source: Researcher 2013

The trend in log of profitability as shown in figure 4.6, shows that sin stocks and non sin stocks experienced increase in profitability from year 2007 to 2008 with a slight decrease later on in 2008, which remained constant up to year 2010 as shown by the log of profitability, 14.5. An increase was however recorded in the subsequent year.

Figure 4.6: Trend in Log of profitability



Source: Researcher 2013

4.3 T-Test

Statistics in Table 4.1 indicate that the average capital gains for nonsinstocks were -0.254. Results also indicate that the average capital gains for sinstocks was 0.33. The difference in capital gains was significant as indicated by a p value of 0.000. The mean of dividends for sin stocks was 3.97 while that of non sinstocks was 4.24. The difference in dividends was insignificant as the p value of 0.745 is higher than the conventional p value 0.000. The mean returns for sin stocks were -0.207 while that of non sinstocks was 0.388. The difference in return was significant as indicated by p value of 0.000.

Results also indicate that the gearing ratio of non sinstocks is 0.426 while that of sin stocks is 0.168 meaning that non sinstocks are likely to use debt more than sinstocks. The mean log of total assets for non sinstocks 16.637 and 16.395 sin-stocks indicates that the size of the firm does not differ between sinstocks and nonsinstocks. The mean log of profitability for non sinstocks and sinstocks was 14.44 and 15.31 respectively.

Table 4. 1 : Group Statistic

Variables	Dummy	Mean	Std. Deviation	Std. Error Mean	P value
Capital Gain	Non sinstocks	-0.254	0.3903	0.0473	0.000
	Sin stocks	0.33	0.3574	0.1264	
Dividends	Non sinstocks	3.97	2.188	0.261	0.745
	Sin stocks	4.24	2.595	0.918	
Return	Non sinstocks	-0.207	0.3791	0.0453	0.000
	Sin stocks	0.388	0.3533	0.1249	
Gearing Ratio	Non sinstocks	0.426	0.3077	0.0332	0.010
	Sin stocks	0.168	0.0662	0.0209	
Log of Total Assets	Non sinstocks	16.637	1.9672	0.2121	0.702
	Sin stocks	16.395	0.7569	0.2393	
Log of profitability	Non sinstocks	14.441	1.5804	0.1714	0.093
	Sin stocks	15.317	1.134	0.3586	

Source: Researcher 2013

4.4 Regression Model

A model was applied in determining the relationship between profitability, dummy, gearing ratio, size of firm and return. Result in table 4.3 indicated that the r squared was

0.212 this imply that the overall goodness of fit was good. An r squared of 0.212 indicates that 21.2% of the variation in returns was explained by the independent variables namely gearing ratio, log of total assets, log of profitability and dummy representing sin stocks.

Table 4. 2 Model of fitness

Indicators	Coefficient
R	0.46
R Square	0.212
Adjusted R Square	0.169
Std. Error of the Estimate	0.3794

Source: Researcher 2013

ANOVA statistics in table 4.4 indicate that the overall model was significant. This was supported by an F statistic of 4.904 and p value of 0.001. The reported probability was less than the conventional probability of 0.05 (5%) significance level.

Table 4. 3: Analysis of variance (ANOVA)

Indicators	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2.824	4	0.706	4.904	0.001
Residual	10.509	73	0.144		
Total	13.333	77			

Source: Researcher 2013

Regression coefficients results in table 4.5 indicate that the relationship between gearing ratio and return is positive and insignificant as the p value of 0.178 is greater than the critical p value of 0.05

The relationship between dummy and return is positive and significant ($b=0.589, p$ value=0.000). This implies that a unit increase in sinstock investment leads to an increase in return by 0.589. The relationship is significant because the p value of 0.000 is less than the critical p value of 0.05.

The relationship between size of firm and return is negative and insignificant ($-0.000, p=0.215$).The relationship implies that the size of firm does not lead to an increase in the return. The relationship is insignificant because the p value of 0.215 is greater than the critical p value of 0.05.

The relationship between profitability and return is positive and insignificant ($b_1=.000, p=0.412$). The relationship implies that profitability leads to an increase in the return. The relationship is insignificant because the p value of 0.412 is greater than the critical p value of 0.05.

Table 4.5: Regression Coefficients

Variable	Beta	Std. Error	t	Sig.
Constant	-0.302	0.092	-3.278	0.002
Gearing Ratio	0.350	0.257	1.361	0.178
Dummy	0.589	0.152	3.875	0.000
Size of the firm	0.000	0.000	-1.250	0.215
Profitability	0.000	0.000	0.825	0.412

Source: Researcher 2013

4.5 Summary and Interpretations of Findings

The chapter presented the results of the study. Descriptive statistics were conducted to come up with the trends of the variables that are capital gain, dividend, return, log of profitability, log of total assets and gearing ratio. Regression model with the ANOVA and coefficients analysis was done to determine the relationship of the variables.

Descriptive statistics indicate that there has been an inconsistent trend in capital gain for sin stocks and non sinstocks. The trend analysis of capital gains represented by figure

4.1 shows that there was a decrease in capital gains from 2008 to 2009 with a slight increase in year 2010 and a decrease in year 2011. Results show that the difference in capital gains between sin stocks and non sinstocks was significant with a p value of .000 which is lower than the critical value of 0.05. The trend analysis in dividends shows that there was a high increase in dividends from 2007 to 2009 with a slight decline in 2009 to 2010, and an increase thereafter in period 2010 to 2011. Results also show that the difference in dividends between sin stocks and non sinstocks was insignificant as the p value of 0.745 was higher than the conventional p value of 0.050.

Trend analysis in return of sin stock and non sinstocks recorded a considerable decrease from year 2007 to 2008, later a steady increase in returns in 2009 to 2010, whereby a decline followed from 2010 to 2011. The difference between returns in sin stocks and non sinstocks was significant as the p value of 0.000 is lower than 0.005 conventional values. Results also show that the trend in gearing ratio shows that there has been a steady increase from year 2007 to 2011 which means that the companies having been using debt as a source of financing. The difference between the gearing ratio in sin stocks and non sinstocks was significant as the p value of 0.010 is lower than the conventional p value of 0.005.

The trend in log of total assets representing the size of the firm steadily increases in year 2007 to 2008 with a constant growth between years 2008 to 2009. Later on a steady increase is recorded from year 2010 to 2011. The difference between the size of the firm between sinstocks and nonsinstocks was insignificant as the p value of sinstocks and

nonsinstocks is significant as the p value of 0.702 is higher than the conventional p value of 0.005.

The trend in log of profitability shows that sin stocks and non sin stocks experienced increase in profitability from year 2007 to 2008 with a slight decrease later on in 2008, which remained constant up to year 2010 as shown by the log of profitability, 14.5 an increase was however recorded in the subsequent year. The difference between the profitability of the firm between sin stocks and non sinstocks was insignificant as the p value of sin stocks and non sinstocks is significant as the p value of 0.093 is higher than the conventional p value of 0.005.

The goodness of fit results also indicated that the r squared of 0.212 was sufficient in explaining the effects of the type of firm (sinstocks and nonsinstocks), gearing ratio, size of the firm and profitability in explaining or determining return. Results of the analysis of the variance indicate that the overall model was significant as this was supported by a p value of 0.001 which is less than the convectional probability of 0.05 significance level. Regression analysis done showed that the type of firm that is either sinstocks or nonsinstocks has a positive and significant relationship with return. This is evident by a beta is 0.589 and a p value of 0.000 which is less than the critical value of 0.05. This further implies that a change in invest from non-sin stock to sin stocks increases return by 0.589 units. The analysis also indicates that the size of the firm, gearing ratio and profitability does not affect the return of the companies.

From the given results, it is evident to conclude that sinstocks have a higher capital gains, return and dividends than in nonsinstocks. The results of the study agree with those of Hong and Kacperczyk (2007) who from their sample of 184 sin stock (in the gaming, tobacco, and alcohol industries) found out that sin stocks outperformed the market on a relative basis after taking into account well-known predictors such as stock returns. In addition their study also supported that sins stocks have higher expected returns than non sinstocks however neglected they seem to be by norm-constrained investors. Statman, Fisher and Anginer (2008) who measured the effect of stocks using fortune magazine respondents found that admired stocks which are non sinstocks have lower returns than spurned stocks. As such, their study supports the findings in this study.

Kim and Venkatachalam (2006) also found superior performance for the 111 sin stocks they analyzed in United States but concluded that the sin stocks' superior performance was due to a high quality of financial reporting that made them attractive to a wide group of investors and analysts. Their findings support the results of this study. Edmans (2009) insists that socially responsible stocks have higher risk-adjusted returns because the market is slow to recognize the positive impact that strong CSR practices have on companies' expected future cash flows. However this argument fails to agree with the findings of the study. Socially responsible stocks do not perform the market as sinstocks do in Kenya. The findings of this study disagree with those of Fama and French (2007) who suggest that stocks of companies with high scores on environmental and social responsibility issues outperform companies with low scores.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this chapter is to discuss and summarize the findings of the study and finally give conclusions and recommendations.

5.2 Summary

The goodness of fit results also indicated that the r squared of 0.212 was sufficient in explaining the effects of the type of firm (sinstocks and nonsinstocks), gearing ratio, size of the firm and profitability in explaining or determining return. Results of the analysis of the variance indicate that the overall model was significant as this was supported by a p value of 0.001 which is less than the convectional probability of 0.05 significance level.

Regression analysis done showed that the type of firm that is either sinstocks or non sinstocks have a positive and significant relationship with return. This is evident as the beta is 0.589 and the p value of 0.000 is less than the critical value of 0.05. This further implies that sinstocks and nonsinstocks increase return by 0.589 units. The analysis also present that the size of the firm does not affect the return of the companies. The relationship between the two is negative and insignificant as the beta is -.000 and a p value of 0.215 which is higher than the critical p value of 0.05.

Statistics indicate that capital gains of 0.33 for sinstocks were higher than that of nonsinstocks -0.254. Dividends of nonsinstocks, 3.97 were slightly lower than that of sinstocks, 4.24 while returns recorded that sinstocks had a return mean of 0.388 while non sinstocks had a return of -0.207. From the given results, it is evident to conclude that sinstocks have a higher capital gain, return and dividends than in non sinstocks.

5.3 Conclusion

From the results conclusions can be made on the trend of dividends to have increased in throughout the years. This also shows that sinstocks and nonsinstocks had an insignificant difference in the dividends throughout the years. Conclusion can also be made on the return of sinstocks and non sinstocks to have a significant difference which is also evident the inconsistent trend between the years.

The trend in gearing ratio draws a conclusion that there was a steady increase in the gearing ratio of sinstocks and nonsinstocks firms. This means that debt was used as a source of financing throughout years. The difference between the gearing ratio in sinstocks and nonsinstocks was significant. Another important conclusion drawn from the study is that the size of the firm of sinstocks and nonsinstocks had an insignificant difference which is also explained with the increase in its trend. In addition the profitability of sinstocks and nonsinstocks increased steadily through the years; 2007-2008 with a slight decrease in 2008 which remained constant to year 2010. The difference between the profitability of sinstocks and nonsinstocks was insignificant.

The results presented an r squared of 0.212 which showed that the variables that is gearing ratio, size of the firm, profitability and size of the firm which were used to determine return of sinstocks and non sinstocks was sufficient. From the results is prudent to recommend that sinstocks outperform non sinstocks, however the operating performances of those sinstocks are not different from non sinstocks. The results are consistent with the previous findings of the developed and developing countries that, sinstocks behave similarly in most parts of the world. Individuals and companies interested in investing in sinstocks companies will experience a financial cost

5.4 Recommendation

The study provides a recommendation mostly to investors. Sin stocks have higher expected returns than comparable stocks; however, neglected they are by norm constrained investors. Therefore, such investors should split their investment in sin stock and non sin stocks.

Social norms can have important consequences in the stock market; therefore investors can devote a certain portion of money to invest in sin stocks and another in non sin stocks. Many investors simply invest in companies that they are familiar with and that trade on exchanges that they can easily access. However, this is not the best option as expanding ones mindset globally may lead to discovery of other stocks worth investing in.

The study will also provide recommendations other researchers, who may want to contribute to the continuous debate of sin stocks returns and non sinstocks returns. The

results of the study can be used to validate the conceptual model in a research of the same concept.

5.5 Limitations of the Study.

One of the limitations of the study is that it failed to address the effects of corporate governance on the operations and performance of sinstocks and non sinstocks. The study also failed to address the determinants of investing in controversial stocks such as the legal and environmental factors and cost involved in investing in either stocks.

The study did not describe the composition of investors of socially responsible stocks and controversial stocks. This includes determining the largest population who invest in sin stocks and non sinstocks. Demographic characteristics such as the age, income or education level could have been used as indicators to determine the group that dominates largely in sin stocks and non sinstocks investments.

In addition, the study was limited to identifying whether sin stocks outperform the market as a result of them having monopoly pricing. Monopoly pricing is where the companies have market power thus their ability to control product prices without fear of competitors.

5.6 Areas for Further Studies

Suggested further areas of study should be on sin stock performance and corporate governance. This will analyze critical analyze the effects of corporate governance on sin stocks performance.

Further studies should also include the effect of legal and religious environments on the performance of sin stocks and non sinstocks returns in Kenya. In developed countries such as the US, individual investors of socially responsible stocks tend to be younger and better educated. The same study can be done in Kenya to determine the majority group of investors in both sin and non sin stocks.

Finally, sinstocks in Kenya being quite few, another research to determine their exemplary performance in the market could consider whether monopolistic pricing is a factor that contributes to sinstocks' higher returns.

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APPENDICES

APPENDIX I - FIRMS LISTED AT THE NSE AS AT DECEMBER 2012

Agriculture Sector

1. Eaagads Limited
2. Kakuzi Limited
3. Kapchorua Tea Company Limited
4. Rea Vipingo Plantations Ltd
5. Limuru Tea Company Limited
6. Sasini Tea And Coffee Limited
7. Williamson Tea Kenya Limited
8. Kenya Orchards

Commercial and Services

9. Access Kenya Group
10. Bauman Ltd
11. Car And General (Kenya) Limited
12. CMC Holdings Limited
13. Express Kenya Limited
14. Hutchings Biemer Ltd
15. Kenya Airways Limited
16. Marshalls (East Africa) Limited
17. Nation Media Group Limited
18. Safaricom Limited
19. Scangroup Limited
20. Standard Group Limited
21. TPS (Tourism Promotion Services) Eastern Africa Limited (Serena Hotels)
22. Uchumi Supermarkets Limited

Financials and Investments

23. Barclays Bank Of Kenya Limited
24. British American Ins
25. Carbacid Investments Ltd
26. CFC Insurance
27. CFC Stanbic Bank (Formerly Cfc Bank)
28. City Trust Ltd
29. Diamond Trust Bank (Kenya) Limited
30. Equity Bank Limited
31. Housing Finance Company Limited
32. Centum Investment Company (ICDCI) Limited
33. Jubilee Holdings Limited
34. National Bank Of Kenya Limited
35. Kenya Commercial Bank Limited
36. Kenya Reinsurance Corporation Ltd
37. NIC Bank Limited
38. Olympia Capital Holdings Limited
39. Pan Africa Insurance Company Limited
40. Standard Chartered Bank Kenya Limited
41. Cooperative Bank
42. Trans-Century

Industrial and Allied Sector

43. Athi-River Mining Limited
44. Bamburi Cement Company Limited
45. British American Tobacco Kenya Limited
46. Crown-Berger Kenya Limited
47. East African Cables Limited
48. East African Portland Cement Company
49. East African Breweries Limited
50. Eveready East Africa Limited

51. Boc Kenya Limited
52. The Kenya Power & Lighting Co. Ltd
53. Kenya Electricity Generating Company (Kengen)
54. Kenol Kobil
55. Total Kenya Ltd
56. Mumias Sugar Company Ltd
57. Sameer Africa Limited
58. Unga Group Limited

Source: Nairobi Security Exchange (2013). *Handbook for the NSE*. Retrieved from www.nse.co.ke

APPENDIX II- COMPANIES SAMPLED

1. Athi River Mining Ord
2. Bamburi Cement Ltd Ord
3. Barclays Bank Ltd Ord
4. CMC Holdings Ltd Ord
5. E.A.Cables Ltd Ord
6. Equity Bank Ltd Ord
7. Express Ltd Ord
8. KenGen Ltd. Ord
9. Kenya Airways Ltd Ord
10. Kenya Commercial Bank Ltd Ord
11. Kenya Power & Lighting Ltd Ord
12. Nation Media Group Ord
13. Safaricom limited Ord
14. Standard Chartered Bank Ltd Ord
15. British American Tobacco Kenya Ltd Ord
16. East African Breweries Ltd Ord
17. Mumias Sugar Co. Ltd Ord
18. Rea Vipingo
19. Sasin Tea
20. The Co-operative Bank of Kenya Ltd Ord

Source: Nairobi Security Exchange (2013). *Handbook for the NSE*. Retrieved from

www.nse.co.ke

APPENDIX III: DATA INPUT

Years	Company	Share Price	Capital Gain	Dividends	Return	Non Current Liabilities	Total Financing	Gearing Ratio	Size of the firm(Total Assets)	Log of Total Assets	Profitability	Log of profitability	Dummy
2007	Bamburi cement Co.	196		0.08	0.08	4,231,000	28,405,000	0.15	28,405,000	17.16	8,466,000	15.95	0
2008	Bamburi cement Co.	165	-0.16	0.05	-0.11	4,216,000	25,842,000	0.16	25,842,000	17.07	7,564,000	15.84	0
2009	Bamburi cement Co.	156	-0.05	0.07	0.02	6,227,000	27,168,000	0.23	27,168,000	17.12	9,596,000	16.08	0
2010	Bamburi cement Co.	187	0.2	0.04	0.24	6,170,000	22,772,000	0.27	22,772,000	16.94	4,889,000	15.4	0
2011	Bamburi cement Co.	125	-0.33	0.03	-0.3	2,422,000	17,497,000	0.14	17,497,000	16.68	5,443,000	15.51	0
2007	East Africa Breweries	154		0.04	0.04	2,051,597	22,902,373	0.09	22,902,373	16.95	10,635,771	16.18	1
2008	East Africa Breweries	199	0.29	0.03	0.32	2,269,487	24,386,330	0.09	24,386,330	17.01	12,316,332	16.33	1
2009	East Africa Breweries	145	-0.27	0.04	-0.23	2,746,441	26,400,093	0.1	26,400,093	17.09	11,989,258	16.3	1
2010	East Africa Breweries	185	0.28	0.03	0.31	2,783,675	26,736,301	0.1	26,736,301	17.1	12,568,087	16.35	1
2011	East Africa Breweries	195	0.05	0.03	0.8	7,314,817	34,202,944	0.21	34,202,944	17.35	12,249,504	16.32	1
2007	Athi River Mining	93		0.01	0.01	1,666,345	3,438,329	0.48	3,438,329	15.05	620,640	13.34	0
2008	Athi River Mining	90.5	-0.03	0.01	-0.01	2,382,004	4,509,535	0.53	4,509,535	15.32	705,450	13.47	0
2009	Athi River Mining	111	0.23	0.01	0.24	4,658,399	8,787,329	0.53	8,787,329	15.99	948,714	13.76	0
2010	Athi River Mining	183	0.65	0.01	0.66	8,431,581	13,358,440	0.63	13,358,440	16.41	1,112,962	13.92	0
2011	Athi River Mining	158	-0.14	0.01	-0.12	9,993,361	16,095,887	0.62	16,095,887	16.59	1,362,912	14.13	0

Years	Company	Share Price	Capital Gain	Dividends	Return	Non Current Liabilities	Total Financing	Gearing Ratio	Size of the firm(Total Assets)	Log of Total Assets	Profitability	Log of profitability	Dummy
2007	Barclays Bank Ltd	196		0.03	0.03	2,422,000	17,497,000	0.14	17,497,000	16.68	5,443,000	15.51	0
2008	Barclays Bank Ltd	165	-0.16	0.04	-0.12	6,170,000	22,772,000	0.27	22,772,000	16.94	4,889,000	15.4	0
2009	Barclays Bank Ltd	156	-0.05	0.07	0.02	62,227,000	27,168,000	2.29	27,168,000	17.12	9,596,000	16.08	0
2010	Barclays Bank Ltd	187	0.2	0.05	0.25	4,216,000	25,842,000	0.16	25,842,000	17.07	7,564,000	15.84	0
2011	Barclays Bank Ltd	125	-0.33	0.08	-0.25	4,231,000	28,405,000	0.15	28,405,000	17.16	8,466,000	15.95	0
2007	CMC Holdings Ltd	15.35		0.02		256,508	4,318,352	0.06	4,318,352	15.28	879,236	13.69	0
2008	CMC Holdings Ltd	18.85	0.23	0.02	0.25	240,868	5,075,762	0.05	5,075,762	15.44	1,328,849	14.1	0
2009	CMC Holdings Ltd	10	-0.47	0.04	-0.43	338,558	1,853,464	0.18	1,853,464	14.43	807,283	13.6	0
2010	CMC Holdings Ltd	12.95	0.3	0.02	0.31	424,298	5,879,277	0.07	5,879,277	15.59	584,887	13.28	0
2007	E.A.Cables Ltd	42		2.14	2.14	671,922	1,774,267	0.38	1,774,267	14.39	597,486	13.3	0
2008	E.A.Cables Ltd	26.25	-0.38	3.81	3.44	488,078	1,854,917	0.26	1,854,917	14.43	669,927	13.41	0
2009	E.A.Cables Ltd	20.25	-0.23	4.94	4.71	635,519	2,296,299	0.28	2,296,299	14.65	526,444	13.17	0
2010	E.A.Cables Ltd	16.25	-0.2	6.15	5.95	872,774	2,031,231	0.43	2,031,231	14.52	258,645	12.46	0
2011	E.A.Cables Ltd	10.55	-0.35	4.74	4.39	644,888	1,843,065	0.35	1,843,065	14.43	464,756	13.05	0
2007	Equity Bank Ltd	150		0.01	0.01	38,159,000	14,917,000	2.56	14,917,000	16.52	2,378,000	14.68	0
2008	Equity Bank Ltd	176	0.17	0.02	0.19	58,299,000	19,580,000	2.98	19,580,000	16.79	5,022,000	15.43	0
2009	Equity Bank Ltd	14.35	-0.92	0.03	-0.89	77,904,000	22,908,000	3.4	22,908,000	16.95	5,278,000	15.48	0
2010	Equity Bank Ltd	26.75	0.86	0.03	0.89	115,814,000	27,204,000	4.26	27,204,000	17.12	9,045,000	16.02	0

Years	Company	Share Price	Capital Gain	Dividends	Return	Non Current Liabilities	Total Financing	Gearing Ratio	Size of the firm(Total Assets)	Log of Total Assets	Profitability	Log of profitability	Dummy
2011	Equity Bank Ltd	16.4	-0.39	0.05	-0.34	162,009,000	34,285,000	4.73	34,285,000	17.35	12,834,000	16.37	0
2007	Express Ltd	45		-	-	44,280	207,266	0.21	207,266	12.24	(2,892)	7.97	0
2008	Express Ltd	36.5	-0.19	-	-0.19	58,511	251,853	0.23	251,853	12.44	42,960	10.67	0
2009	Express Ltd	36	-0.01	0.02	0	59,350	253,811	0.23	253,811	12.44	16,830	9.73	0
2010	Express Ltd	69.5	0.93	0.02	0.95	74,073	340,318	0.22	340,318	12.74	101,480	11.53	0
2007	Kenya Airways	95		1.84	1.84	41,084,000	62,724,000	1	62,724,000	17.95	5,975,000	15.6	0
2008	Kenya Airways	52	-0.45	3.37	2.92	36,794,000	62,667,000	0.59	62,667,000	17.95	5,513,000	15.52	0
2009	Kenya Airways	19.75	-0.62	5.06	4.44	37,081,000	54,257,000	0.68	54,257,000	17.81	5,664,000	15.55	0
2010	Kenya Airways	60	2.04	1.67	3.71	32,710,000	52,683,000	0.62	52,683,000	17.78	2,671,000	14.8	0
2011	Kenya Airways	32.25	-0.46	-	-0.46	33,386,000	56,529,000	0.59	56,529,000	17.85	5,002,000	15.43	0
2007	KenGen Ltd	26		0.03	0.03	31,094,483	94,732,672	0.33	94,732,672	18.37	4,719,279	15.37	0
2008	KenGen Ltd	24.5	-0.06	0.04	-0.02	30,943,433	99,068,607	0.31	99,068,607	18.41	3,078,765	14.94	0
2009	KenGen Ltd	14.55	-0.41	0.03	-0.37	39,422,908	103,000,000	0.38	103,000,000	18.45	4,556,281	15.33	0
2010	KenGen Ltd	17.1	0.18	0.03	0.2	73,066,203	144,000,000	0.51	144,000,000	18.78	2,484,953	14.73	0
2011	KenGen Ltd	13.55	-0.21	0.04	-0.17	80,318,110	150,000,000	0.54	150,000,000	18.82	3,651,307	15.11	0
2007	Kenya Commercial Bank	28.5		0.02	0.02	107,274,893	13,204,660	8	13,204,660	16.4	4,225,982	15.26	0
2008	Kenya Commercial Bank	23.5	-0.18	0.04	-0.13	170,124,634	21,086,952	8	21,086,952	16.86	6,012,862	15.61	0
2009	Kenya Commercial Bank	20.5	-0.13	0.05	-0.08	172,207,623	22,803,925	8	22,803,925	16.94	6,300,361	15.66	0

Years	Company	Share Price	Capital Gain	Dividends	Return	Non Current Liabilities	Total Financing	Gearing Ratio	Size of the firm(Total Assets)	Log of Total Assets	Profitability	Log of profitability	Dummy
2010	Kenya Commercial Bank	21.75	0.06	0.06	0.12	212,226,429	31,129,771	7	31,129,771	17.25	9,797,971	16.1	0
2011	Kenya Commercial Bank	16.85	-0.23	0.11	-0.12	286,351,132	44,365,027	6.45	44,365,027	17.61	15,129,374	16.53	0
2007	Kenya Power & Lighting	160		5.78	5.78	62,531	1,462,663	0.04	1,462,663	14.2	399,769	12.9	0
2008	Kenya Power & Lighting	160	-	4.25	4.25	603,119	2,057,227	0.29	2,057,227	14.54	295,179	12.6	0
2009	Kenya Power & Lighting	150	-0.063	4.53	4.47	87,083	1,620,877	0.05	1,620,877	14.3	231,682	12.35	0
2010	Kenya Power & Lighting	132	-0.12	7.12	7	96,411	1,502,981	0.06	1,502,981	14.22	114,685	11.65	0
2011	Kenya Power & Lighting	100	-0.24	6.8	6.56	29,462	1,358,013	0.02	1,358,013	14.12	214,948	12.28	0
2007	Nation Media Group	326		0.03	0.03	267,200	4,003,200	0.07	4,003,200	15.2	1,601,600	14.29	0
2008	Nation Media Group	144	-0.56	0.04	-0.52	131,200	4,445,800	0.03	4,445,800	15.31	1,910,300	14.46	0
2009	Nation Media Group	118	-0.18	0.05	-0.13	89,300	4,803,000	0.02	4,803,000	15.38	1,617,400	14.3	0
2010	Nation Media Group	167	0.42	0.05	0.46	-	5,422,100	-	5,422,100	15.51	2,146,600	14.58	0
2011	Nation Media Group	140	-0.16	0.06	-0.1	163,000	6,285,400	0.03	6,285,400	15.65	2,006,800	14.51	0
2007	Standard Chartered Bank	206		0.05	0.05	80,205,934	10,916,008	7.35	10,916,008	16.21	4,910,188	15.41	0
2008	Standard Chartered Bank	160	-0.22	0.06	-0.16	87,520,764	11,498,807	7.61	11,498,807	16.26	4,719,814	15.37	0
2009	Standard Chartered Bank	161	0.01	0.07	0.08	109,861,407	13,917,565	7.89	13,917,565	16.45	6,728,447	15.72	0
2010	Standard Chartered Bank	258	0.6	0.05	0.65	122,415,127	20,331,122	6.02	20,331,122	16.83	7,681,884	15.85	0

Years	Company	Share Price	Capital Gain	Dividends	Return	Non Current Liabilities	Total Financing	Gearing Ratio	Size of the firm(Total Assets)	Log of Total Assets	Profitability	Log of profitability	Dummy
2011	Standard Chartered Bank	160	-0.38	0.07	-0.31	143,352,168	20,694,456	6.93	20,694,456	16.85	8,255,135	15.93	0
2007	British American Tobacco	139		0.12	0.12	1,032,190	5,725,440	0.18	5,725,440	15.56	2,049,596	14.53	1
2008	British American Tobacco	131	-0.06	0.13	0.07	1,013,524	5,907,169	0.17	5,907,169	15.59	2,416,913	14.7	1
2009	British American Tobacco	178	0.36	0.08	0.44	1,248,055	5,920,131	0.21	5,920,131	15.59	2,108,964	14.56	1
2010	British American Tobacco	270	0.52	0.05	0.57	1,900,596	7,014,908	0.27	7,014,908	15.76	2,722,572	14.82	1
2011	British American Tobacco	246	-0.09	0.07	-0.02	1,997,849	8,409,916	0.24	8,409,916	15.94	484,116	13.09	1
2007	Mumias Sugar Co	26.6		0.06	0.06	1,965,833	10,303,493	0.19	10,303,493	16.15	1,393,611	14.15	0
2008	Mumias Sugar Co	12.7	-0.52	0.03	-0.49	1,712,983	10,754,480	0.16	10,754,480	16.19	1,213,837	14.01	0
2009	Mumias Sugar Co	6	-0.53	0.07	-0.46	3,675,907	13,715,376	0.27	13,715,376	16.43	1,609,972	14.29	0
2010	Mumias Sugar Co	12.85	1.14	0.03	1.17	4,084,237	15,084,089	0.27	15,084,089	16.53	1,572,383	14.27	0
2011	Mumias Sugar Co	7.15	-0.44	0.07	-0.37	5,738,818	20,214,825	0.28	20,214,825	16.82	1,933,225	14.47	0
2007	Rea Vipingo	19.55		0.04	0.04	160,026	869,191	0.18	869,191	13.68	115,302	11.66	0
2008	Rea Vipingo	17	-0.13	0.01	-0.12	202,358	1,077,524	0.19	1,077,524	13.89	168,153	12.03	0
2009	Rea Vipingo	11.1	-0.35	0.05	-0.3	214,222	1,189,672	0.18	1,189,672	13.99	148,949	11.91	0
2010	Rea Vipingo	17.9	0.61	0.04	0.66	281,068	1,270,167	0.22	1,270,167	14.05	67,355	11.12	0
2011	Rea Vipingo	14.75	-0.18	0.07	-0.1	394,644	1,863,504	0.21	1,863,504	14.44	467,196	13.05	0
2007	Sasin Tea	17.5		-	-	610,433	3,565,065	0.17	3,565,065	15.09	(70,723)	11.17	0

Years	Company	Share Price	Capital Gain	Dividends	Return	Non Current Liabilities	Total Financing	Gearing Ratio	Size of the firm(Total Assets)	Log of Total Assets	Profitability	Log of profitability	Dummy
2008	Sasin Tea	7.75	-0.56	-	-0.56	1,717,778	6,435,083	0.27	6,435,083	15.68	1,266,406	14.05	0
2009	Sasin Tea	6.05	-0.22	0.07	-0.15	1,929,050	7,590,872	0.25	7,590,872	15.84	759,722	13.54	0
2010	Sasin Tea	13.3	1.2	0.04	1.24	2,051,037	8,541,016	0.24	8,541,016	15.96	1,382,375	14.14	0
2011	Sasin Tea	12.05	-0.09	0.07	-0.03	2,116,240					1,014,139	13.83	0
2007	Safaricom Kenya Ltd												0
2008	Safaricom Kenya Ltd	3.6		0.01	0.01	6,480,000	49,122,593	0.13	49,122,593	17.71	19,945,160	16.81	0
2009	Safaricom Kenya Ltd	3	-0.17	0.03	-0.13	4,774,580	55,921,660	0.09	55,921,660	17.84	15,304,027	16.54	0
2010	Safaricom Kenya Ltd	5.55	0.85	0.04	0.89	8,005,762	70,300,880	0.11	70,300,880	18.07	20,966,670	16.86	0
2011	Safaricom Kenya Ltd	3.8	-0.32	0.05	-0.26	12,282,945	79,737,036	0.15	79,737,036	18.19	18,361,363	16.73	0
2007	Cooperative Bank Kenya												0
2008	Cooperative Bank Kenya	10.65		0.01	0.01	68,876,714	13,609,141	5.06	13,609,141	16.43	3,359,117	15.03	0
2009	Cooperative Bank Kenya	8.95	-0.16	0.02	-0.14	94,386,499	16,291,592	5.79	16,291,592	16.61	3,735,695	15.13	0
2010	Cooperative Bank Kenya	19	1.12	0.02	1.14	133,743,882	20,596,109	6.49	20,596,109	16.84	5,772,618	15.57	0
2011	Cooperative Bank Kenya	12.25	-0.36	0.03	-0.32	146,764,980	21,546,621	6.81	21,546,621	16.89	6,362,562	15.67	0

Source: Researcher 2013