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**A Comparative Study of the Returns of Quoted Sin and Non Sin Stocks at the  
Nairobi Securities Exchange**

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## A Comparative Study of the Returns of Quoted Sin and Non Sin Stocks at the Nairobi Securities Exchange

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### ABSTRACT

**Purpose:** The purpose of the study was to compare returns of quoted sin and non-sin stocks at the Nairobi Securities Exchange. The major objective of the study was to establish whether stock returns of sin stocks outperform non sin stocks.

**Methodology:** The study used 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. The study grouped 18 firms into the non-sin stock category and another 2 firms (BAT ad EABL) into the sin stock category. Secondary data sources were used 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.

**Results:** The study found out that sin stocks have higher capital gains, high expected return and dividends than in non-sin stocks

**Unique contribution to theory, practice and policy:** The study recommended that Sin stocks have higher expected returns than comparable stocks; however, neglected they are by norm constrained investors. Therefore, investors should split their investment in sin stock and non-sin stocks.

**Keywords:** *non-sin stocks, sin stocks, Local Government*

## 1.0 INTRODUCTION

Sin stocks 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). 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 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).

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 sin stocks or whether they outperform the market. Therefore, a properly diversified portfolio should include both sin stocks and non sin stocks.

Socially responsible investment (SRI) combines investors' financial objectives with their concerns about social, environmental and ethical issues.

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. 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.

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).

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)

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).

## 1.2. Problem Statement

Sin 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 the Study**

The major objective was to establish whether stock returns of sin stocks outperform non sin stocks

## **2.0 LITERATURE REVIEW**

### **2.1 Theoretical Review**

#### **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 sin stocks post a higher return than non sin stocks.



## **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 sin stocks. Consequently, the higher expected return in sin stocks is as a result of the higher risk.

## **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 sin stocks as it acknowledges that the return of both sin stocks and non sin stocks is a function of the risk and two other factors, namely firm size and book-to-market ratio.

## 2.2 Empirical Literature Review

Kim and Venkatachalam (2006) also found superior performance for the 111 sin stocks 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) 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.

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.

### 2.3: Conceptual Framework

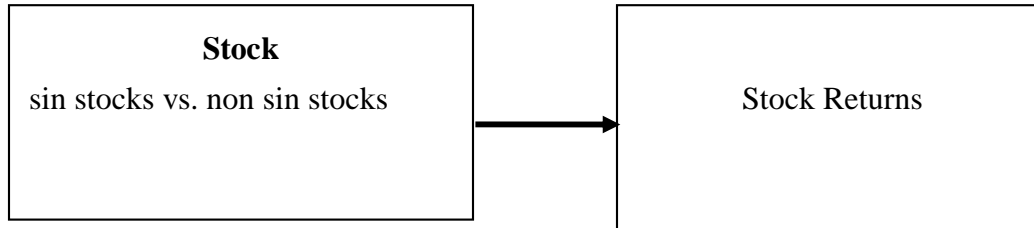


Figure 1: Conceptual framework

### 3.0 RESEARCH METHODOLOGY .

This study was conducted using explanatory research design. A population of 58 firms listed at the NSE as at December 2012 was taken. 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. 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:

$$\text{Returns} = \sum_{t=2007}^{2011} \left[ \frac{(\text{price}_t - \text{price}_{(t-1)})}{\text{price}_{(t-1)}} + D_t \right]$$

Dt = Dividend

Price t = Stock Price in time t

Price (t-1) = Stock Price in time t-1



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. 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

X1 = Gearing Ratio as measured by Non Current Liabilities/Total Financing

X2= Size of the firm as measured by the log of Total Assets

X3= log of profitability

X4= Dummy for being sin stock (1), non sin stock (0)

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

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

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.

## **4.0 RESULTS AND DISCUSSIONS**

### **4.1 Descriptive Statistics**

#### **4.1.1 Measures of Central Tendency**

Results in table.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 1: Descriptive Statistics

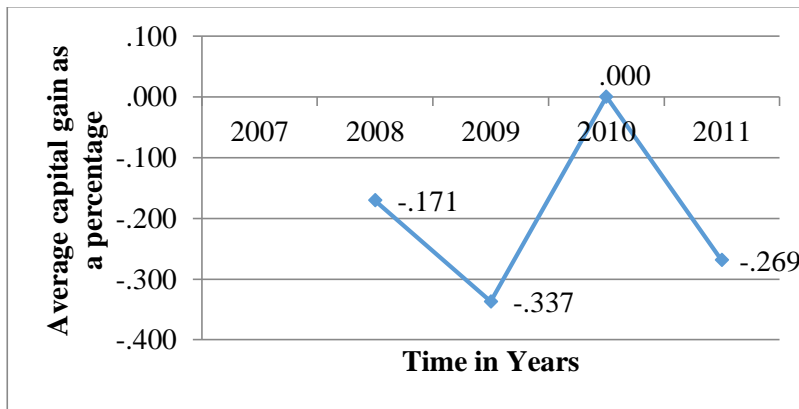
	Mean	Std. Deviation
Return	-0.146	0.4161
Capital gain	-0.193	0.4249
Dividends	4.03	2.219
Log of total assets	16.612	1.8768
Log of profitability	14.534	1.5582
Gearing ratio	0.399	0.3024

Source: Researcher 2013

#### 4.1.2 Annual Trends for Returns

The trend analysis of capital gains represented by figure 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.

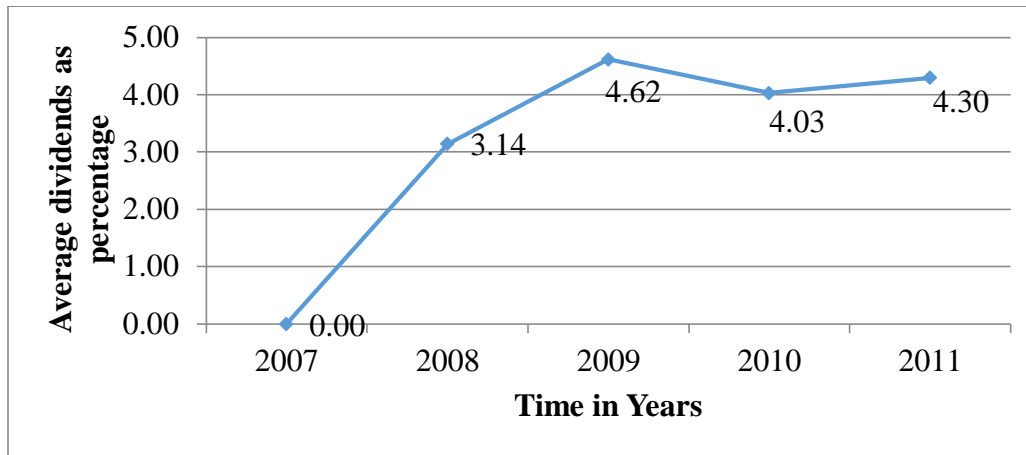
Figure 1: Trend Analysis in Capital Gain



Source: Researcher 2013

The trend analysis of dividends represented by figure 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.

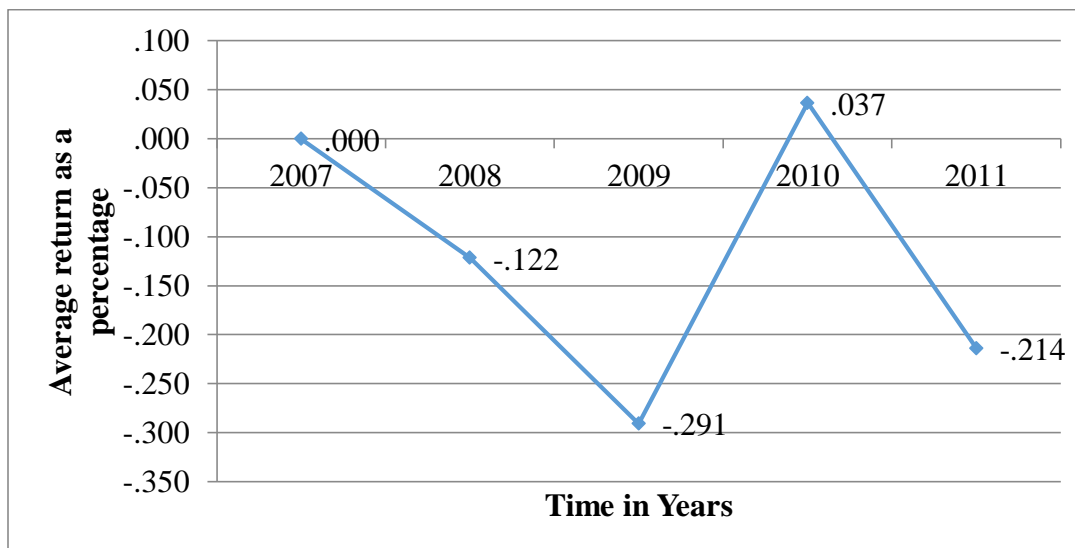
**Figure 2: Trend Analysis in Dividends**



Source: Researcher 2013

Figure 3 represents trend analysis in return of sin stock and nonsin stocks 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.

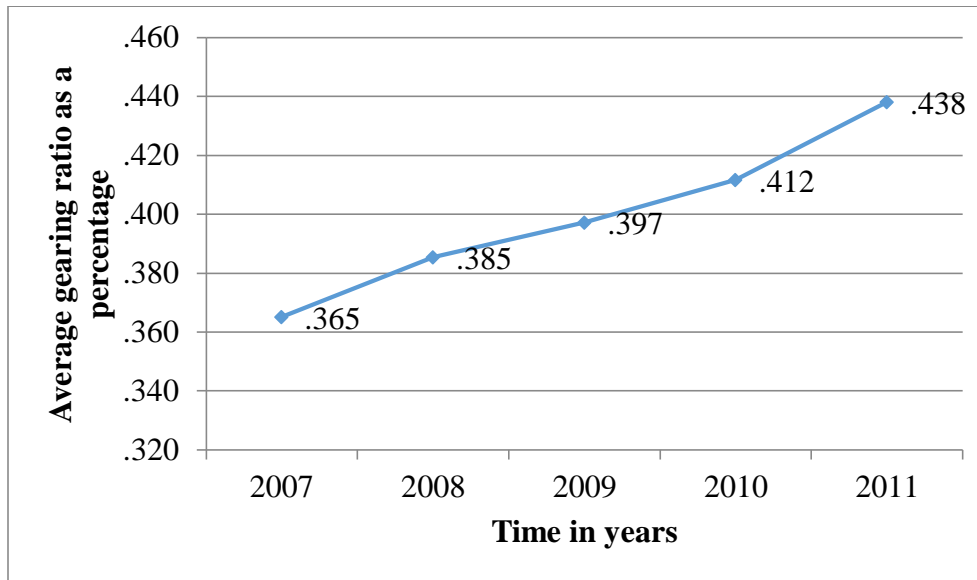
**Figure 3: Trend Analysis in Return**



Source: Researcher 2013

Results in figure 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.

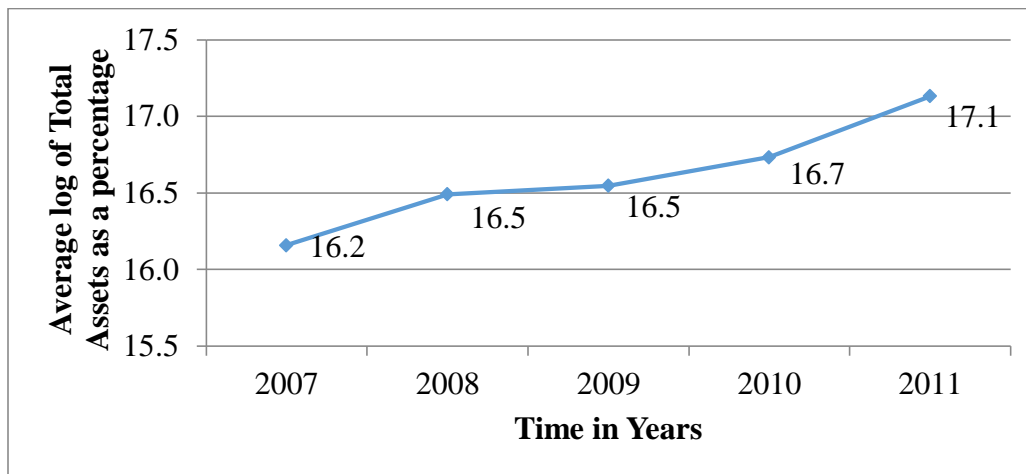
**Figure 4: Trend Analysis in Gearing Ratio**



Source: Researcher 2013

The trend in log of total assets representing the size of the firm as shown in figure 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.

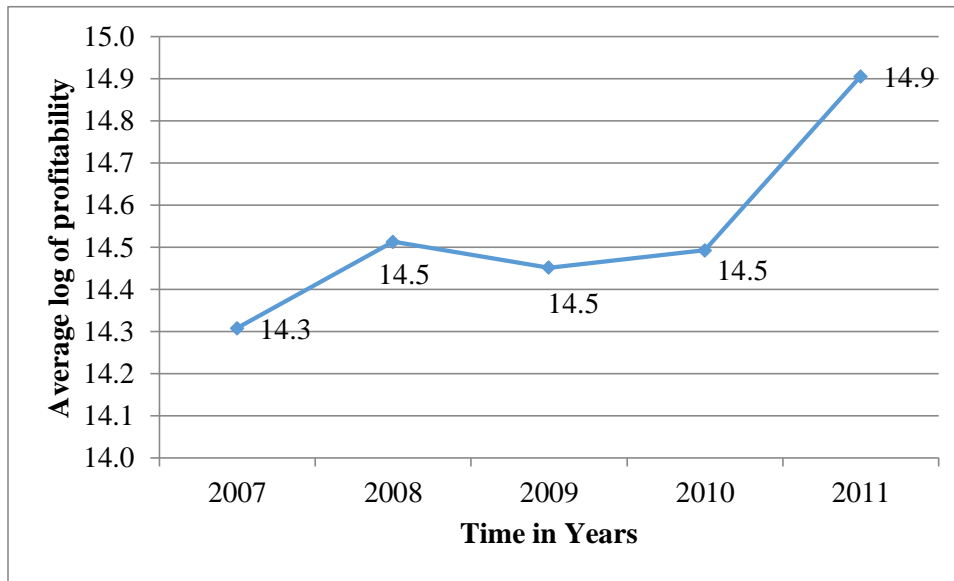
**Figure 5: Trend analysis in Log of Total Assets**



Source: Researcher 2013

The trend in log of profitability as shown in figure 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 6: Trend in Log of profitability**



Source: Researcher 2013

#### 4.1.3 T-Test

Statistics in Table 2 indicate that the average capital gains for nonsin stocks were -0.254. Results also indicate that the average capital gains for sin stocks 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 sin stocks 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 sin stocks 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 sin stocks is 0.426 while that of sin stocks is 0.168 meaning that non sin stocks are likely to use debt more than sin stocks. The mean log of total assets for non sin stocks 16.637 and 16.395 sin-stocks indicates that the size of the firm does not differ between sin stocks and nonsin stocks. The mean log of profitability for non sin stocks and sin stocks was 14.44 and 15.31 respectively.



**Table 2: Group Statistic**

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

Source: Researcher 2013

#### 4.1.4 Regression Model

A model was applied in determining the relationship between profitability, dummy, gearing ratio, size of firm and return. Result in table 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 3 Model of fitness**

Indicators	Coefficient
R	0.46
R Square	0.212
Adjusted R Square	0.169

Std. Error of the Estimate	0.3794
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Source: Researcher 2013

ANOVA statistics in table 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: 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 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 ( $b=0.589, p \text{ value}=0.000$ ). 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 ( $b1=0.000, p=0.412$ ). 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 .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

Descriptive statistics indicate that there has been an inconsistent trend in capital gain for sin stocks and non sin stocks. The trend analysis of capital gains represented by figure 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 sin stocks 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 sin stocks 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 sin stocks 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 sin stocks 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 sin stocks 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 sin stocks and nonsin stocks was insignificant as the p value of sin stocks and nonsin stocks 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 sin stocks was insignificant as the p value of sin stocks and non sin stocks 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 (sin stocks and nonsin stocks), 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 sin stocks or nonsin stocks 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 sin stocks have a higher capital gains, return and dividends than in nonsin stocks. 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 sin stocks 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 sin stocks 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 sin stocks 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.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

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 (sin stocks and nonsin stocks), 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 sin stocks or non sin stocks 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 sin stocks and nonsin stocks 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 sin stocks were higher than that of nonsin stocks - 0.254. Dividends of nonsin stocks, 3.97 were slightly lower than that of sin stocks, 4.24 while returns recorded that sin stocks had a return mean of 0.388 while non - sin stocks had a return of - 0.207. From the given results, it is evident to conclude that sin stocks have a higher capital gain, return and dividends than in non - sin stocks.

## 5.1 Conclusion

From the results conclusions can be made on the trend of dividends to have increased in throughout the years. This also shows that sin stocks and nonsin stocks had an insignificant difference in the dividends throughout the years. Conclusion can also be made on the return of sin stocks and non-sin stocks 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 sin stocks and nonsin stocks firms. This means that debt was used as a source of financing throughout years. The difference between the gearing ratio in sin stocks and non-sin stocks was significant. Another important conclusion drawn from the study is that the size of the firm of sin stocks and nonsin stocks had an insignificant difference which is also explained with the increase in its trend. In addition the profitability of sin stocks and non-sin stocks 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 sin stocks and non-sin stocks 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 sin stocks and non-sin stocks was sufficient. From the results is prudent to recommend that sin stocks outperform non sin stocks, however the operating performances of those sin stocks are not different from non-sin stocks. The results are consistent with the previous findings of the developed and developing countries that, sin stocks behave similarly in most parts of the world. Individuals and companies interested in investing in sin stocks companies will experience a financial cost

## 5.2 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-sin stocks returns. The results of the study can be used to validate the conceptual model in a research of the same concept.



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