A comparative Study of the Returns of quoted Sin and Non Sin Stocks at the Nairobi Securities Exchange

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1. Abstract
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 listen in the NSE. The sample of the study involved the 20 firm that make up the NSE index. 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.

- Regression analysis done showed that the type of firm that is either sin-stock or non sin-stock have a positive and significant relationship with return. T-test statistics indicate that capital gains for sin-stocks were higher than that of non sin-stocks. Dividends of non sin-stocks, were slightly lower than that of sin-stocks.

- 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.
2. Chapter One: Overview
Sin stocks are the stocks of companies involved in producing alcohol, tobacco and gambling (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.

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.
Research Problem

Research gap

- 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.
Research Problem Cont’

- 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 sin-stocks 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.
3. Chapter Two: Literature Review
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).

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.

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 sin-stocks.
Theories

- 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.

- The Capital Asset Pricing Model was formulated by Sharpe, Mossin and Litner independently. However, Sharpe (1964) formalized the Capital Asset Pricing Model (CAPM). 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 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 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.
Empirical Evidence

- 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).

- 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.
Empirical Evidence

• 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? The study objective was to establish whether stock returns of sin stocks outperform non sin stocks.
4. Chapter Three: Research Methodology
Research Methodology

- 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).

- 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.

- 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 sinstock category and another 2 firms (BAT ad EABL) into the sinstock 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 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
- \( X_1 \) = 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, $\alpha = \text{the constant term}$ while the coefficient $\beta_{ii} = 1 \ldots 4$ 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:

- 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.
5. Chapter Four: Analysis and Presentation of Results
Overview of Results

- Summary of results.

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

- Statistics in Table 1 indicate that the average capital gains for non sin-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 was -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 non-sin-stocks.

- The mean log of profitability for non-sin-stocks and sin-stocks was 14.44 and 15.31 respectively.
Overview of Results

- 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>
<thead>
<tr>
<th>Indicators</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>2.824</td>
<td>4</td>
<td>0.706</td>
<td>4.904</td>
<td>0.001</td>
</tr>
<tr>
<td>Residual</td>
<td>10.509</td>
<td>73</td>
<td>0.144</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13.333</td>
<td>77</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. Discussion, Conclusions and Recommendations
Discussion

• 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 sinsstocks 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 sinsstocks 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.
Discussion

- 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.
Areas for further research

• 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 sin stocks 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, sin stocks 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 sin stocks' higher returns.
Conclusion

- 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 conventional probability of 0.05 significance level.

- Regression analysis done showed that the type of firm that is either sinstocks or nonsinstocks 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 nonsinstocks.