

**THE EFFECT OF SIN ACTIVITIES ON THE FINANCIAL PERFORMANCE OF
COMPANIES LISTED AT 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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DEDICATION

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TABLE OF CONTENTS

DECLARATION	ii
ACKNOWLEDGEMENTS	iii
DEDICATION	iv
LIST OF ABBREVIATIONS	vii
LIST OF TABLES	viii
LIST OF FIGURES	ix
ABSTRACT	x
CHAPTER ONE	1
INTRODUCTION	1
1.1 Background of the Study	1
1.1.1 Sin Activities.....	2
1.1.2 Financial Performance	4
1.1.3 The Effects of Sin Activities on Financial Performance.....	6
1.1.4 Nairobi Securities Exchange	8
1.2 Research Problem	10
1.3 Objective of the Study	11
1.4 Value of the Study	11
CHAPTER TWO	12
LITERATURE REVIEW	12
2.1 Introduction.....	12
2.2 Theoretical Review	12
2.2.1 Modern Portfolio Theory	12
2.2.2 The Capital Asset Pricing Model	13
2.2.3 Arbitrage Pricing Theory	14
2.2.4 Good Management Theory	14
2.3 Determinants of Financial Performance of Listed Companies	15
2.3.1 Company Size	15
2.3.2 Age	15
2.3.3 Leverage.....	16
2.3.4 Working Capital Ratio	16
2.3.5 Risk and Growth	16
2.4 Empirical Review.....	17
2.5 Summary of Literature Review.....	20

CHAPTER THREE	22
RESEARCH METHODOLOGY	22
3.1 Introduction.....	22
3.2 Research Design.....	22
3.3 Population	22
3.4 Sample.....	22
3.5 Data Collection	22
3.6 Data Analysis	23
3.6.1 Analytical Model.....	23
3.6.2 Test of Significance	23
CHAPTER FOUR	24
DATA ANALYSIS, RESULTS AND DISCUSSION	24
4.1 Introduction.....	24
4.2 Findings.....	24
4.2.1 Descriptive Statistics.....	24
4.2.2 Annual Performance Measures Trends	25
4.2.3 Test Statistics	28
4.2.4 Test of Model.....	30
4.3 Interpretation of Findings	31
CHAPTER FIVE	35
SUMMARY, CONCLUSION AND RECOMMENDATIONS	35
5.1 Introduction.....	35
5.2 Summary	35
5.2 Conclusion	36
5.3 Recommendations For the Policy	36
5.4 Limitations for the Study	37
5.5 Areas for Further Research	38
References	39
Appendix I Listed Companies As at 31st December 2013	43
Appendix II Sampled Listed Companies	46
Appendix III Data Schedule	47
Appendix IV Average data schedule	54

LIST OF ABBREVIATIONS

ABT	-	Arbitrage pricing model
ANOVA	-	Analysis of variance
BAT	-	British American tobacco
CAPM	-	Capital asset pricing model
CMA	-	Capital markets authority
CAGR_{TA}	-	Compounded annual growth rate of total assets
CA	-	Current assets
CL	-	Current liability
EABL	-	East African breweries limited
IPO	-	Initial public offer
MPT	-	Modern portfolio theory
NSE	-	Nairobi securities exchange
ROA	-	Return on assets
ROS	-	Return on sales
ROE	-	Return on equity
S&P 500	-	Standard and Poor index
SRI	-	Social responsible activities
SIF	-	Social activities fund

LIST OF TABLES

Table 4.1 Descriptive statistics.....	24
Table 4.2 One Sampled T-test.....	28
Table 4.3 Correlation Analysis.....	29
Table 4.4 Model Summary.....	30
Table 4.5 Analysis of Variance (ANOVA).....	30
Table 4.6 Regression Model.....	31

LIST OF FIGURES

Figure 4.1 Average Log of total assets trend.....	25
Figure 4.2 Average Return on Assets trend.....	25
Figure 4.3 Average Leverage ratio trend.....	26
Figure 4.4 Working Capital Ratio trend.....	26
Figure 4.5 Average Compounded Annual Growth rate in Total Assets.....	27
Figure 4.6 Companies Age trend.....	27

ABSTRACT

This study sought to establish the effect of sin activities on the financial performance of companies listed at the Nairobi Securities Exchange. The study adopted a descriptive research design with the population consisting of all 63 listed firms in the NSE as at December 2013. The sample of the study consisted of the 20 high performing NSE companies. At the time there are only two sin companies in this index listed. Furthermore this study grouped 18 firms into the non-sin companies' category and another 2 firms (BAT and EABL) into the sin companies group. Secondary data was gathered from NSE financial reports data base for analysis which was done using the Statistical Package for Social Sciences (SPSS version 19) to generate the descriptive statistics and also to generate the trends results and correlation findings. One sampled T-Test was used to check whether the mean performance of Sin companies differ from the mean performance of non-sin companies. Findings on the analysis of variance (ANOVA) indicate that the overall model was statistically significant as indicated by an F statistic of 2.943 and p value less than 0.0498. The regression analysis revealed that the independent variables including log of asset which was used as a measure of companies total assets base and compounded annual growth rate which the measure of the company's growth rate were considered statistically significant in explaining the variation of financial performance of companies. Regression analysis results also showed that the relationship between log of assets, compounded annual growth rate and return on asset was positive. Nevertheless, some independent variables were insignificant as their p values were greater than 0.05. They include companies' age, leverage ratio and working capital ratio. This indicates that these variables are not key indicators of companies' financial performance. Correlation analysis results, T-tests statistics in general indicate that Sin companies' financial performance is higher compared to non-sin companies because of the factors such as high total assets base, higher compounded annual growth rate, higher working capital ratio, and lower leverage ratio. This study provides recommendations to financial managers to ensure that strategies are set aside to address key critical financial decisions arising in the company particularly developing good financial management technique to provide adequate responses to financial challenges and ensure effective working capital management.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Ethical companies have the moral principles but there are other companies that generate cash flows from sinful activities. Sin companies are those companies that involve themselves in such activities like alcohol brewing, animal testing, tobacco, oil and armament firms, human rights issues, nuclear energy development, intensive farming and even in some cases the use of fur. According to Hong and Kacperczyk (2009), sin companies are those firms in the alcohol, tobacco, and gaming industries as these firms are most likely to be subject to social norm constraints due to their undesirable social consequences when consumed excessively and their highly addictive properties.

Sin companies are those companies which engage themselves in producing tobacco, alcohol and gambling activities (Ahren, 2004). Non sin companies or socially responsible companies are those which integrate or centrally value their activities decision and their investor's financial objective about its effect on social, environmental and ethical issues. Do non-sin companies sacrifice their market returns by focusing more on ethical issues? Does socially responsible investing hurt total expected market return?

However, companies involved in sin are those that generate profits from activities that exploit consumers' habit-forming or sin-seeking behaviours' (Fabozzi & Oliphant, 2008). Assessed by society against current moral standards, the business activities of these companies, whilst certainly not illegal, meet with general disapproval (Fabozzi, 2008). Hong and Kacperczyk (2006) studied the performance of sin companies on the American market. Over the period 1965-2003, they find that sin companies outperform the market due to the fact they are less held by institutions due to social norms. Kim and Venkatachalam (2006) examine whether this neglect effect is attributable to differential information risk for these firms. They found that sin organizations financial reporting quality is highly recognized to a control of group of firms.

The debate over the trade-off of private and social value of economic activities has been ongoing for at least two decades but reached a turning point recently when people began to re-evaluate the ultimate objectives of economic agents and regulations (Pigou 2005, Cassidy 2009). Recently, Hong and Kacperczyk(2009) suggest that social norms are priced and show that the stocks in alcohol, tobacco, and gaming industries (sin companies) on average have less institutional ownership and analyst coverage due to the constraints on the social norms. Additionally, Kim and Venkatachalam, (2010) showed that financial reporting quality of sin firms is better than other firms.

1.1.1 Sin Activities

Sin activities are those activities that are widely considered by responsible investors to be immoral and unethical. Socially responsible investing (SRI) has been practiced for more than one hundred years. There are many ways of defining the term Socially Responsible activities. In this study, SRI funds will be defined as funds that have a limitation on their activities universe by the application of social, environmental or ethical criteria, in line with previous research by (Mallin, 1995). Hong and Kacperczyk, (2009) examines the effects of social norms on markets by examining weighted portfolio of American sin companies for example companies involved in the alcohol, tobacco and gambling activities. They find evidence that investors pay a price for avoiding these firms by proving significant outperformance of sinful portfolio. Unethical stocks seem to behave like value stocks as they provide higher expected returns consisting of a neglect effect.

In conformity, Merton, Hong and Kacperczyk (2009), attribute the lower valuation to the limited risk sharing of the sinful industries. They find that unethical stocks outperform the market because they exhibit less institutional ownership and less analyst coverage compared to non-sinful stocks with similar characteristics. The findings also imply that Hong and Kacperczyk imply that sinful companies seem to be disregarded because of social norms rather than the danger of litigation risk, which is not in line with portfolio theory. Olsson (2005), reports that investors who fund companies that promote human sin get rewarded for their sinful act. He points out that American sin companies behave like value stocks and were able to outperform the market in the period 1985 to 2004 by 6.84 percent per annum. Using the single factor model, he calculates the reward for sinful activities to 87 basis points per month.

Fabozzi, and Oliphant (2008) confirmed that sin portfolio obtained a return of 19% over the benchmarks in term of both magnitude and frequency. Moreover, they found some specific criteria for these positive excess returns in sin companies. First, adhering to social norms has an implicit and explicit cost and since sin companies do not have such adherence, they can obtain a higher return. Second, there is some evidence indicating that the initial pricing offerings (IPOs) of sin companies are undervalued because of this company's bad image. Sin companies 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 activities decisions in this sector (Salaber, 2007).

Gregory, Whittaker and Bauer (2007), showed that there is no significant difference between the SRI funds' and regular funds' performance. In this research the empirical link between socially responsible practices and financial performance has been tested by comparing historical returns of SRI funds to regular funds and/or a market index. White (1991) and White (1996) argue that fund performance might have more to do with the fund managers' ability than the firm level performance.

Kim and Venkatachalam (2006), offer further evidence on potential disadvantages of avoiding unethical companies and explore other explanations to the disregard of sin companies activities. Consistent to prior findings, the authors exhibit that unethical stocks tend to be larger, have lower book-to-market ratios and higher annual earnings per share compared to ethical stocks. They also find that despite of sin activities carried on sin companies exhibit more persistent earnings and have accruals that are better predictors for future cash flows. They conclude that, despite superior returns and financial reporting quality, investors are willing to accept lower returns in order to comply with social standards.

Venkatachalam (2006), examine whether neglect effect contributes to information risk for these firms; i.e. sin companies may possess greater information risk due to poor financial reporting quality. They found that sin firms' financial reporting quality is superior to control group of firms, implying that the neglect by market participants is not related to financial reporting factors. It showed that, despite higher returns and standard financial reporting quality, investors are willing to pay a more in order to meet societal norms.

Statman (2006) performed a study on the characteristics that define socially responsible companies by comparing the content of the S&P 500 index to the contents of four SRI indexes - DS400, Calvert Social Index, Citizens index, DJ sustainability index – US. His studies found that SRI indexes vary in composition and social responsibility scores but the mean social scores of each is higher than that of the S&P 500 index and they vary in the emphasis they place on particular characteristics.

Socially responsible companies also face fewer of the costs and risks associated with class-action lawsuits, consumer boycotts, unfavourable 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, 2004).

1.1.2 Financial Performance

Organizational performance can be subjectively judged by many different parameters, resulting in many different interpretations of successful performance. Each of these perspectives of organizational performance can be argued to be unique (Robert, 2004). Performance management can take many forms from dealing with issues internal to the organization to catering to stakeholders or handling issues in its environment. Adams (1996), Adams and Buckle (2003) and Shiu (2004) focus mainly on the performance of the insurance business. The study provides a comparative analysis of the determinants of financial performance for two different insurance companies in Malaysia which advocates Islamic insurance. The study provides insight into the key factors affecting the financial performance in general sin companies and insurance companies.

Barton & Gordon (1988) suggest that firms with higher profit rates will use low debt because of their ability to use retained earnings to finance its activities. Higher use of debt increases the risk of insolvency of companies. Total assets are considered to positively influence the company's financial performance because it symbolizes companies' size. Performance management involves the use of both quantitative and qualitative techniques and paying due attention to the human (behavioural) side of the enterprise (Arie, 2005). A developed system

enables managers to develop systematic ways to manage future performance; for example, planning, performance forecasting and target setting (Mohammad, 2012).

Company's performance evaluation focuses mostly on efficiency and effectiveness of a company's operations. According to Elizabeth and Elliott (2004) carried a study on efficiency, customer service and financing performance among Australian financial institutions. The results showed that all financial performance measures including interest margin, return on assets, and capital adequacy are positively correlated with customer service quality scores. A company's financial performance is significantly influenced by its market position. Ross (1996) argues that both net turnover and net profit margin influence the profitability of a company over period of time. High company turnover means better use of assets owned by the company and then better efficiency, higher profit margin means that the entity has substantial market share. The size of the company contributes to a positive effect on its financial performance because larger firms can use this advantage to get some financial benefits in business relationships.

Performance is a contextual concept associated with the phenomenon being studied (Hofer, 1983). In the context of organizational financial performance, performance is a measure of the change of the financial state of an organization, or the financial outcomes that results from management decisions and the execution of those decisions by members of the organization. Since the perception of these outcomes is contextual, the measures used to represent performance are selected based upon the circumstances of the organization(s) being observed? The measures selected represent the outcomes achieved, either good or bad (Robert, 2004).

In general, the concept of organizational performance is based upon the idea that an organization is the voluntary association of productive assets, including human, physical, and capital resources, for the purpose of achieving a shared purpose (Barney, 2001). Those providing the assets will only commit them to the organization so long as they are satisfied with the value they receive in exchange, relative to alternative uses of the assets. As a consequence, the essence of performance is the creation of value. So long as the value created by the use of the contributed assets is equal to or greater than the value expected by those contributing the assets, the assets will continue to be made available to the organization and the organization will continue to exist (Robert, 2004).

1.1.3 The Effects of Sin Activities on Financial Performance

Performance measurement is a crucial topic in the field of management in the modern world. Researchers have argued that since the beginning of 1990s performance measurement has been changing rapidly (Eccles, 1991). Berman (2002) writes that sin companies come with other advantages besides stability. Most of these stocks have lower valuations than the overall market. He also indicated that sin companies tend to benefit from very conservative accounting because their industries fall under considerable scrutiny from regulator.

Mutual funds and hedge funds may be increasingly subject to social norm pressures as witnessed by the recent growth of the socially responsible activities class, we expect some of them to flout social conventions and buy sins tocks if those stocks are neglected by others. Consistent with these predictions, we find that sin companies have less institutional ownership, as compared to stocks of otherwise comparable characteristics during the period of 1980–2006 for which data are available. Fama and French (1997) argued that industry groupings indicated that sin companies have on average about 28% of their shares held by institutions. In contrast, sin companies have about 23% of their shares held by institutions, which is approximately an 18% lower institutional ownership ratio than that of their comparable companies.

Merton (1987) conducted a study on neglected stocks and segmented markets. The findings shows that there are at least two reasons why sin companies should be cheaper than other stocks and hence outperform comparable, even after accounting for well- known predictors of stock returns. First, the neglect of sin companies by an important set of investors, such as institutions, means that the prices of those stocks will be depressed relative to their fundamental values because of limited risk sharing and hence, sin companies should have higher expected returns than comparable. Second, because of neglect or limited risk sharing, Merton shows that the CAPM no longer holds and not even beta which matters for pricing. As a result, the increased litigation risk associated with the products of sin companies, which is further driven by social norms, should further increase the expected returns of sin companies.

Stambaugh and Levin (2003) suggest that there is potentially sizeable effect of socially responsible investing on the prices of sin companies. This figure has remained fairly constant ever since the Social Activities Forum started making these estimates in the mid-1990s.

Second, the stock market provides a rich set of data on invest or behavior, stock pricing, and firm behavior, which allows investors to discriminate more finely among alternative hypotheses than do existing empirical studies on social norms. Arrow (1972) points out that complete theory of discrimination must explain why entrepreneurs' without discriminatory taste cannot make profits by hiring labor cheaply from the groups discriminated again by other employers. Romer, (1984) provide sufficient conditions under which social customs that are disadvantageous to the individual nevertheless may persist if individuals are sanctioned by loss of reputation for disobedience of the custom.

Heinkel, Kraus, and Zechner (2001), developed a model to consider the price implications of ethical investing that excludes companies that pollute. They developed the model in the spirit of Merton that look at the price implications of limited risk sharing due to neglect induced by social norms or ethical investing. Their empirical findings match well with their calibration results; they validated characterization of the prices of sin companies as being influenced by social norms by looking at the corporate decisions of sin companies. Using data from 1962 to 2006 they confirmed that sin companies have significantly higher leverage after accounting for the usual predictors of capital structure. From the analysis they presumed that sin companies should finance their operations using relatively more debt than equity, since debt markets tend to be less transparent than equity markets.

Teoh, Welch, and Wazzan(1999), who examined the effect of the shareholder boycott of South Africa's apartheid regime. They find that for all the visibility associated with the boycott, there was little discernible effect either on the valuations of banks and corporations with South African operations or on the South African financial markets, because corporate involvement in South Africa was small in the first place. However, they found some weak evidence those institutional shareholdings incorporations with South African companies increased when those corporations divested. While the sinful aspects of alcohol and gaming have long been recognized by societies in to which they have been introduced, tobacco has been the subject of negative social norms only as recently as the past four decades. Tobacco consumption has been viewed as sinful for only a relatively short period since its introduction to Europe in the mid-16th century. This is because the adverse individual and public health consequences of smoking tobacco were not widely known until the mid- 1960s.

Woo & Baker (2005) indicated that unobservable data when analyzed individually would be expressed by the financial ratios. Profitability ratios measure the degree of earnings in relation to a base, such as assets, sales, or capital. Financial ratio obtained by dividing one financial data with other and is used to express the relativity of different financial variables. Statement of financial position and statement of comprehensive income are most commonly used sources of financial information when calculating financial ratios. It involves the calculation and analysis of ratios that use data from one or more than one financial statements.

Shiu (2004) confirmed that companies with more liquid assets are likely to perform better as they are able to realize cash at any point of time to meet its obligation and are less exposed to liquidity risks. By not having sufficient cash or liquid assets, insurance companies may be forced to sell activities securities at a substantial loss in order to settle claims promptly. However, there are contrasting views with regard to performance and liquidity in relation to the agency theory. Leverage Ratios measure the firm's use of debt and equity to finance its operations. Leverage ratio shows the debt obligations a firm has compared to shareholder's equity. Higher leverage ratio for a company means high debt hence a very risky activities venture. Leverage determines the company's ability to meet its long term financial obligations when they become due. This ratio measures how effectively the firm is managing its assets. If the company lacks enough assets it will lose sales, which will hurt its profitability, free cash flow and market prices thus it's therefore good to have the right amount invested in assets.

1.1.4 Nairobi Securities Exchange

During the British colonial era 1920s Kenyan market traded shares and stock. During this time there were no formal procedures on how the trading was carried on. The transactions relied on ones trustworthy and individual judgment because there were no rules, regulations, procedures, policies or even market or exchange to govern the exchange (NSE, 2013). In 1951 Drummond who was working as an estate agent established the stock broking firm. Vasey come up with the idea of setting up a stock exchange in 1953 and the London Officials agreed to set up an exchange named Nairobi Stock Exchange (NSE) as an overseas stock exchange (Muga, 1974). The Nairobi stock exchange (NSE, 2011) was officially initiated in 1954 as a voluntary association of stock brokers to facilitate pooling of resources to enhance long term capital to finance companies.

The Nairobi stock exchange changed its name in July 2011 to Nairobi securities exchange as a guide to its strategic plan to involve into a full service securities exchange which supports trading, clearing and settlement of equities, debt, derivatives and any other new securities. Automated bond trading was initiated in 2009 to facilitate trading in the bond market. Nairobi securities exchange is the largest exchange in East Africa and part of east African exchanges association comprising of dare salaam stock exchange and Uganda securities exchange with various cross listing (NSE, 2012).

NSE has the mandate of providing trading platform for listed securities and overseeing its member firms. It provides public offers and listing of securities traded at the exchange (NSE, 2012). Trading is carried out via the automated trading systems which were commissioned in 2006 and it marked the significant step in the efforts to enhance efficiency in the exchange. There are no limits to trades by foreign investors and they can acquire shares freely subject to a minimum reserve ratio of 25% for domestic investors in each listed company. Capital Markets Authority was established in 1989 through the Capital Markets Authority Act, Cap 485 A (the CMA Act) to regulate and oversee the orderly development of Kenya's capital markets. The Authority ensures the development and maintenance of an appropriate legal and regulatory framework with regards to capital, liquidity and other aspects, promote governance, transparency and corporate social responsibility activities to boost investors' confidence, enhance efficiency and to create and maintain a fair and orderly market. The Authority also reviews existing policies and makes recommendations to the Government on new policy issues that could promote and enhance market development.

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 companies banks which are members of NSE and Custodians (CDSC, 2004). Currently, NSE has 63 quoted companies from different sectors of the economy. Among the listed companies two foreign companies are sin companies as at December 2013 namely East African breweries (EABL) which has different brands especially in alcohol products and British American Tobacco (BAT) which manufactures, packages and distributes cigarette products to Kenyan market (NSE, 2013).

1.2 Research Problem

Financial performance of a company is of critical interest to different group of investors. Current and potential investors determine the company's financial strength and weaknesses to enable assess company's value. External analysts, management are also concerned with analysing company's performance over time. Wide stock screening by individual investors, institutional investors based on different indicators i.e. religion, tradition has generally led to two types of stocks Sin companies and non-sin companies. Sin cash flows comprise of stocks from companies that are associated with activities that are widely considered to be unethical. Hong and Kacperczyk (2005) identify sin companies as being those stocks related to the tobacco, alcohol, and gaming industries. The belief for better performance of sin companies recently is that people might drink, smoke or even gamble a bit more during tough rather than good times which leads to recent better performance of sin companies when compared to SRI (Brush, 2003).

Many studies, both global and local have been carried out to address the effect of sin and non sin activities on the financial performance of companies. Internationally, Hong and Kacperczyk (2009) argued that sin companies stocks, compared to the wide universe of stocks, are less held by institutions and followed slowly by financial analysts. Managers are becoming more aggressive to social norms and financial performance to meet shareholders main objective.

Mukherjee (2007) conducted a comparative Analysis of Indian Stock Market with International Markets. The findings revealed that stock market is witnessing heightened activities and is increasingly gaining utmost attention from the regulators. In the current context of globalization and the subsequent integration of the global markets this paper captures the trends, similarities and patterns in the activities and movements of the Indian Stock Market in comparison to its international counterparts.

On estimate 10 percent of funds under management in the United States are invested according to ethical guidelines (Heinkel 2001). Probably the allocation of capital according to ethical principles has probably characterized the actions of some investors for a very long time; the ethical mutual fund industry has a much shorter history of approximately three decades (Shank, Manullang & Hill, 2005).

Local studies carried on the issue of sin and non- sin companies are not adequate to provide all required information to bridge the gap between investors and activities managers. Ngacha (2009) carried on a comparative study between the value and growth for the companies quoted at the NSE. Rajab (2009) analysed the effect of on the performance of other stocks at the Nairobi securities exchange. Pudha (2010) investigated the factors that induce local investors to invest in shares of companies listed at the Nairobi securities exchange. Njeru (2013) carried a comparative study between the sin and non-sin companies for the companies listed at the NSE. Kagunda (2010) conducted a comparative study of the performance between unit trusts and a market portfolio of shares at NSE. This study tends to address the research question: What is the effect of sin activities on the financial performance of companies listed at Nairobi securities exchange?

1.3 Objective of the Study

To determine the Effects of Sin Activities on the Financial Performance of companies listed at Nairobi Securities Exchange.

1.4 Value of the Study

Key policy makers i.e. government, capital market will stand to gain significantly from the findings of this study in that they will have at their disposal vital information concerning the Nairobi stock exchange and reasons behind investing in sin and non-sin companies to enable develop policies aligned with the current developments in the exchange to promote efficiency, transparency and effectiveness.

The study will assist learning institutions in providing reference and literature to future researchers seeking to carry out further research in this field or in a related area. This will aid in development of knowledge in this line of study. Since there are certain areas in this study which may not be covered exhaustively future researchers will have a point of reference from which to start and study further about sin and sin companies both locally and internationally.

The result of this study is expected to benefit individual investors, institutional investors and companies as they make activities decisions. This study will also enable investors to choose between investing in sin companies or non-sin companies based on facts about the company's profitability, liquidity, financial leverage and asset capitalization and not to rely on hearsay.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides a detailed theoretical framework based on the effect of sin activities on the financial performance of companies. Specifically, it focuses on theoretical foundation, empirical review of literature, determinants of financial performance and summary of literature review.

2.2 Theoretical Review

This subsection presents theories and models available to minimize investor's investment uncertainty. Modern portfolio theory is based on the idea of stocks diversification to minimize or hedge against non-diversifiable risk. The capital asset model explains how the risk as a variable can be factored in a model to enable determine the stocks market return while Arbitrage pricing model brings the idea of determining stocks market return by use of a model including more than one variable.

2.2.1 Modern Portfolio Theory

This theory is developed from the concept of securities diversification to reduce or to hedge against systematic risk. The risk in a portfolio of diversified individual stocks will be less than the risk inherent in holding individual stocks separately provided the risk of individual stocks are negatively related. Markowitz (1952), define portfolio management theory as an activities theory based on the idea that risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward. It is one of the most important, influential and commonly used economic theory used in finance and activities. He argued that it is not enough to focus at the expected risk and return of one particular stock. Investing in portfolio of stock or more than one stock reduces the perceived risk to investors due to diversification. It builds on the idea that; putting all of your eggs in one basket is a very risky idea.

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 activities management strategies Markowitz model is a single- period approach, which assumes that an investor has a given initial endowment to invest. Markowitz showed that activities is not just about picking stocks, but about choosing the right

combination of stocks among which to distribute one's nest egg. A portfolio that contains both assets will always pay off, regardless of whether it's a rainy or sunny season. Adding one risky asset to another can reduce or increase the overall risk of a portfolio depending on the risk relation between the assets. In modern portfolio theory (MPT) there are 5 statistical measures to determine the activities risk-reward profile to investors. They include alpha, beta, standard deviation, R-squared and the Sharpe ratio (www.google.com).

2.2.2 The Capital Asset Pricing Model

The CAPM was introduced by Treynor (1962), Sharpe (1964), Lintner (1965) and Mossin (1966) independently. The CAPM builds on the modern portfolio theory developed by Markowitz in 1959. Markowitz's argued that, an investor selects a portfolio that produces different returns today. The model assumes that investors are risk averse and, when building their portfolios, they factor in mean and variance of their one-period activities return. As a result, investors choose efficient portfolios to minimize the variance of portfolio return, given expected return and to maximize expected return, given variance. Black (1972) developed another version of CAPM, called Black CAPM or zero-beta CAPM that does not assume the existence of a riskless asset. In finance, the capital asset pricing model (CAPM) is used to determine required rate of return of an asset theoretically to ascertain whether asset will be added in well-diversified portfolio, given that assets unsystematic risk. The model factors in systematic risk or market risk indicated as beta (β) in the market, expected market return of the market and the expected risk free rate of return of the asset.

Basu's (1977), evidence that when common stocks are sorted on earnings-price ratios and future returns on high E/P stocks are higher than predicted by the CAPM. Banz (1981) documents a size effect: when stocks are sorted on market capitalization average returns on small stocks are higher than predicted by the CAPM. Bhandari (1988) finds that high debt-equity ratios (book value of debt over the market value of equity, a measure of leverage) are associated with returns that are too high relative to their market betas. Statman (1980) and Rosenberg, Reid and Lanstein (1985) document that stocks with high book-to-market equity ratios (B/M, the ratio of the book value of common stock to its market value) have high average returns that are not captured by their betas.

2.2.3 Arbitrage Pricing Theory

Ross (1976) developed Arbitrage pricing model as an alternative to capital asset pricing model which assumes that risk is the only determinant of assets returns. Arbitrage pricing theory (APT) is a well-known method of estimating the price of an asset; it assumes that asset's return depends on various macroeconomic, market and security-specific factors. APT builds on the capital asset pricing model (CAPM) The APT formula which includes more than one variable is as showed:

$$E(R) = r_f + \beta_{RP1} + \beta_{RP2} + \beta_{RP3} + \beta_{RP4} + \dots + \beta_{RPn}$$

Where: $E(R)$ = the asset's expected rate of return, r_f = the risk-free rate, β = the sensitivity of the asset's return to the selected factor, RP = the risk premium. The general idea behind APT is that macroeconomic, security specific factors and asset sensitivity influences the expected return on a financial asset: Security- specific influences for any given security includes the following inflation, production measures, investor confidence, exchange rates, market indices or changes in interest rates. After the asset's expected rate of return from the APT model is determined the asset price of is arrived at using discounted cash flow model.

2.2.4 Good Management Theory

Waddock and Grave (1997), developed good management theory and explained CSPCFP link, as further improvement on stakeholder theory (Donaldson & Preston, 1995). Assumptions developed under the good management theory are that a company should factor in stakeholders interest without focusing on its financial situation. This will enable the company to improve on its image and reputation. Based on resource-based perspective, the features are one of company's assets in the intangible component that is one component contributing to the company's competitive advantage (Barney, 1991). Good management theory encourages managers companies to continuously seek better ways to improve the company's competitive advantage, which ultimately can enhance the company's financial performance. Miles and Covin (2000), environmental performance is an alternative way to satisfy stakeholders interest and can be only different layer of advantage that shows competitive power. Good management theory proponents also suggest that good management practice has high relation to corporate social performance because it improves company's relationship to its main stakeholders, and this in turn will improve the company's financial performance (Donaldson & Preston). Good management theory has received some empirical support (McGuire, 1988, Waddock & Grave 1997).

2.3 Determinants of Financial Performance of Listed Companies

Analysis of the determinants of corporate financial performance is essential for all the stakeholders, but especially for investors. A company's financial performance is directly influenced by its market position. Profitability can be decomposed into its main components: net turnover and net profit margin. Ross (1996) argues that both can influence the profitability of a company one time. Risk and growth are two other important factors influencing a firm's financial performance. Since market value is conditioned by the company's results, the level of risk exposure can cause changes in its market value. Economic growth is another component that helps to achieve a better position on the financial markets, because market value also takes into consideration expected future profits.

2.3.1 Company Size

Company size is an important determinant of firm performance. Size can have a positive effect on firm performance, since larger firms can leverage their size to obtain better deals in financial as well as product or other factor markets (Mathur & Kenyon, 1998). Large organizations often get access to cheaper financial resources, as well. Hardwick (1997) in his study investigated whether there is a relationship between performance and company size measured by the total number of assets. The findings showed that there is a positive relationship between performance and company size related to operating cost efficiencies, increasing output and economising on unit of cost. Large corporate size also enables companies to effectively diversify their assumed risks and respond more quickly to changes in market conditions. Industrial organisation economists such as Bain (1968) and Scherer (1980) have argued that large firms possess monopoly power which enables them to set prices above the unit costs involved in the production of the products resulting in extra return for the larger firms. Adams (1996) believes that large companies are able to diversify their activities portfolios and to reduce their business risks and improve their performance. Large companies generally outperform smaller ones because they manage to utilise economies of scale and have the resources to attract and retain managerial talent.

2.3.2 Age

Several earlier studies (Batra, 1999, Lumpkin & Dess, 1999) indicated that firm age has an influence on its performance. Sorensen & Stuart (1999), on their study confirmed that organizational inertia operating in old firms tend to make them inflexible and unable to appreciate changes in the environment. Newer and smaller firms, as a result, take away

market share in spite of disadvantages like inadequate financing, unrecognized brand names and corporate reputation and image with older firms.

2.3.3 Leverage

Capital structure of a firm is an important determinant influencing firm performance (Kakani & Reddy, 1996). Modigliani-Miller hypothesis held that the financial structure is irrelevant for firm performance because there is no optimal capital structure that exists for all companies. Recent, theories of finance recognize capital structure of a firm to be relevant for determining its financial performance. Myers (1984) pecking order hypothesis indicated that firms prefer retained earnings to debt and they prefer debt to new equity as a form of financing new activities. Barton & Gordon (1988) suggested that a firm with high earnings rate would maintain a relatively lower level of leverage because of its ability to finance itself from retained earnings. Use of more debt despite the benefit can lead to firms to have increased bankruptcy risk. The capital structure of a firm also affects its governance, to the extent that debt-holders become important stakeholders of a firm with higher leverage.

2.3.4 Working Capital Ratio

Long-term solvency position of a firm is usually given by its working capital ratio (WCM). It is given by $\frac{\text{current assets} - \text{current liabilities}}{\text{total sales}}$. Working capital component of namely inventory, receivables and payables has two dimensions, time and money. If a firm can get money to move faster around the cycle or reduce the amount of money tied up in the business, it will generate more cash. Similarly, if it can negotiate improved terms with suppliers, the firm can effectively create finances to help fund future sales (Johnson, 1982; Gup, 1983). The faster a firm expands the more cash it will need for working capital and activities (Martin, 1991).

2.3.5 Risk and Growth

Risk and Growth of firm performance affects its market valuation. Coefficient of variance of earnings is mostly used as a measure of risk, and annual assets (or sales) growth rate as a measure of growth of the firm. Since, market value of a firm is a function of its return, given the level of its risk. (Fruhan, 1979), risk of a firm becomes an important determinant of its valuation. Growth is the other important component influencing valuation because financial markets, it is argued, impute the expected future profit streams as well as in determining in the value of a firm (Varaiya, 1987). High growth firms are expected to have a higher future profit margin.

2.4 Empirical Review

Jensen (1968) conducted a study on the performance of mutual funds in the period 1945-1964. They found that the debt requires effective and efficient management to retain only profitable projects to avoid wound up of the company. Indeed, debt financing would encourage leaders to be more efficient and effective in their leadership roles. However, most studies that have examined the relationship debt, ownership structure and performance, were based on U.S. and French data.

Shin and Soenen (1998) investigated the relationship between several financial indicators and profitability in North American companies during the period between 1975 and 1994. The variables used for profitability were return on assets (ROA) and return on sales (ROS). Their research found strong evidence of a negative relation between profitability and cash conversion cycle, which means that the shorter the days of working capital, the higher the profitability. He also confirmed that profitability is also negatively related to current ratio and total debt/total asset variables while sales growth is positively related to profitability.

Browne, Carson and Hoyt (1999), conducted a study on the market predictors and performance persistence in the insurance industry. The findings indicated that as equity returns increase, returns on insurer's activities portfolio may also increase and this will improve the performance of the insurer. Booth, Cooper, Haberman and James (1999) are of the view that equities have the benefit of providing inflation hedge and over the long term, the activities would be expected to give higher real returns than fixed interest activities. Firms that use equity finance are able to make its performance better since there is direct control because all the equity holders are the residual claimants.

Brailsford, Oliver and Pua (2002) carried a study and argued that property managers and property owners of blocks acting on the external debt levels should be more sensitive. These researchers confirmed that the relationship between debt and ownership of an outer block is significantly positive. This result confirms the hypothesis that external block holders are required to control the behaviour of leaders to demonstrate the non-linearity of the relationship between property managers and debt.

Waxler (2004) revealed that sin companies were able to outperform the market during short recession periods, specifically during 1990-1991 and 2001-2002. Beginning on June 30, 2003 S&P 500 stocks index was down by 1.55 percent for the previous year, down 33.91% during the following years, and down 14.05% for the next five years. During that period, gaming and casinos, types of sin companies, had a market return of 24.65%, 66.36% and 145.13% consecutively.

Driffield (2005) conducted a study on whether there is any possible interaction between debt and firm performance using a system of simultaneous equations. He presumed two alternative hypotheses for the relationship. The first hypothesis focuses on the most successful companies. In the latter case the most successful companies reduce their debt levels to protect shareholder wealth in the risk of bankruptcy (Latrous, 2007). Abdennadher (2006) shows the negative and significant effect of debt on performance in the Tunisian context for the study of twenty listed companies over the period 1996-2000.

Abdennadher (2006) discusses the relationship between debt and performance in relation to agency problem explained by agency theory. He argued that the use of debt smoothens the interests of management with those of shareholders. Jensen and Meckling (1976) revealed that the relationship between performance and the debt is positive. It is negative when the agency costs related to the relationship managers / shareholders are high and deteriorate the value of the firm.

Lazaridis and Tryfonidis (2006) investigated whether there is a statistically significant relationship between corporate profitability and several financial indicators. They used a sample of 131 companies listed in the Athnes Stock Exchange for the period of 2001-2004. The independent variables used were fixed financial assets, the natural logarithm of sales, financial debt ratio, cash conversion cycle and its components day's inventory, days receivable and day's payable. The dependent variable is profitability measured by gross operating profit. The research findings show negative relation between cash conversion cycle and financial debt with profitability, while fixed financial assets have a positive coefficient. The authors replaced cash conversion cycle with accounts receivable, and inventory, they found negative relation with accounts receivable and inventory. This was confirmed by Deloof (2003) who argued that there is negative relation between gross operating profit and accounts receivable, inventory and accounts payable.

Salaber (2007) investigated sin companies in three industries in 18 European countries. She found that sin companies' 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 companies as compensation.

Ching (2010) in their study of Brazilian listed companies indicated that a better cash conversion efficiency improves ROS return on sales while day's inventory has negative association with ROS and ROA return on assets. Debt ratio is also negative related to ROA only. However it displays no statistical evidence in ROE improvement with any of the indicators. Saha, Sharma and Wright (2010) examined sin mutual funds, regarding comparability between Socially Responsible Investing (SRI) returns and S&P 500 conventional index. The authors compare the Domini Social Equity Mutual Fund (DSEFX) a proxy of SRI, with VICEX mutual fund, which only has sin funds available for investing. They found that "sin based companies generate more returns compared to non-sin companies.

Aziza (2011) investigated the performance of islamically screened portfolios listed at the Nairobi Stock Exchange. The study used all the companies listed at the NSE which were 47 as at 31st December 2010. These companies were islamically screened in order to come up with an Islamic portfolio. 25 companies to form the Islamic portfolio were selected while 22 non Islamic portfolio companies were left out. To form a 20 share index 5 companies were dropped from the Islamic portfolio considering companies which had stock splits or lower market return. The NSE 20 Share Index was used as a benchmark for the Islamic portfolio. The findings revealed that there was no significant difference between the risk and raw returns of the conventional portfolio and Islamic portfolio. The Sharpe measure was in favor of the Islamic portfolio while the Treynor ratio was in favor of the conventional portfolio, both with significant differences. The Jensen measure had mixed results.

Kim and Venkatachalam (2011) found that the neglect is not explained by financial reporting factors. They also found that sin companies' managers offer higher quality information than that offered by other companies' managers. Furthermore, Hong and Kacperczyk (2009) consider that sin companies are rejected because investors prefer to conform to social norms rather than rational financial reasons. They found that this aversion to sin companies by

institutional investors has a very important consequence over financial operations because these stocks outperform the market on average

Karaduman, (2011) used a sample of 127 listed firms in Istanbul from several sectors for the period of 2005-2009. They found out that firm size (represented by logarithm of assets) and sales growth have positive relation with return on asset while days receivable, days inventory, days payable, cash conversion cycle and debt ratio (as being total debt/total asset) are negatively related. Mohamad and Saad (2010) worked with 172 Malaysian companies chosen in a random basis for the period of 2003-2007. Regression analysis shows that profitability variables (represented by return on assets and return on activities) are negatively correlated with cash conversion efficiency, current ratio, current liabilities to total asset ratio and total debt to total asset ratio. Profitability variables are positively correlated with current asset to total asset ratio.

Njeru (2013) carried out a comparative study to establish the market return between sin and non sin stock companies. The study adopted an explanatory research design with the population consisting of all firms listen in the NSE. The sample of the study consisted of the top 20 NSE firms. 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 also showed that the independent variables namely gearing ratio, log of total assets and log of profitability were satisfactory in comparing the returns of sin companies and non-sin companies.

2.5 Summary of Literature Review

The quest for efficient and effective financial management has led to the development of theories and models to provide background on how investors view financial market which holds their wealth. Markowitz (1952) developed portfolio management theory which uses the concept of asset diversification to minimize or reduce non-diversifiable perceived in the market. He argued that risk in portfolio is less compared to risk associated with holding stocks separately. Treynor, Sharpe, Lintner and Mossin independently developed Capital asset pricing model which builds on the Markowitz idea asset diversification. They developed a model incorporating many assumptions to support their idea. They argued that investors market return in highly influenced by only one factor, that is risk. Therefore they developed single asset pricing model to help determine market return based on the assumption. Later,

Ross in 1976 argued that market return is not influenced by one variable but many variables from macroeconomic, market and industry specific factors.

All the above studies present some differences and similarities. The term profitability is measured in different ways by the authors. It was measured as being gross operating profit, net operating profit, return on activities, return on asset (ROA) and return on sales (ROS). Although the majority of authors found evidence that cash conversion cycle have negative relation with profitability, for Ganesan (2007) it has no association to ROA. Deloof (2003) and Ching (2010) they present negative relation, although for the latter authors only days in inventory were relevant. There is no conflict between the authors regarding leverage, debt financing, firm size and sales growth

Ahrens in 2004 asserts that investors pay a price if they reject to invest in sin companies, when deciding their activities portfolios, because their stocks are perceived to achieve a higher performance than the market during certain periods. Hong and Kacperczyk (2009) on their study found that sin stock companies obtain higher risk-adjusted return than socially responsible mutual funds. Lehan (1935) on their study confirmed that there is positive effect of the concentration of the shareholder on the corporate performance. Njeru (2013) on his study found that the independent variables namely gearing ratio, log of total assets and log of profitability were satisfactory in comparing the returns of sin companies and non sin companies. Salaber (2007) investigated sin companies in three industries in 18 European countries. She found that sin companies' returns depend on legal and cultural characteristics, such as religious preference, level of excise taxation, and degree of litigation risk.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter introduces the logical framework to be followed in the process of conducting the study. The research methodology includes research design, target population, sample size, sampling procedure, data collection instruments, data collection procedures, data analysis procedures and analytical model.

3.2 Research Design

According to Kerlinger (1973) the research design is the plan structure and strategy of investigation concerned to obtain answers to research questions and control variance. This study adopted descriptive research design. According to Donald and Pamela (1998) descriptive study concerns with finding out what, where and how of phenomena under investigation. This design was used because it enables the researcher to generalize the findings to a larger population.

3.3 Population

According to Ngechu (2004), a population is well defined as set of people, services, elements, and events, groups of things or households that are being investigated. Population studies are more representative because everyone has equal chance to be included in the final sample that is drawn according to (Mugenda and Mugenda, 1999). This study comprised of all 63 listed companies at NSE as at 31st December 2013.

3.4 Sample

According to Ngechu (2004) sampling ensures that some elements of a population are selected as a driving representative of the population. Kerry and Bland (1998) argued that stratified random sampling technique produces estimates of overall population parameters with greater precision and ensures a more representative sample is selected. 20 companies to form a 20 share index were selected to form a sample. 18 of the selected companies from the index were grouped to non-sin companies while the 2 companies from the index were grouped to sin companies (EABL and BAT).

3.5 Data Collection

According to Ngechu (2004) there are many methods of data collection. The choice of an instrument depends on the attributes of the subjects, research problem question, objectives,

design, expected data and results. Secondary data was used for analysis in this study. The data was sourced from NSE data base for the period between 2009-2013.

3.6 Data Analysis

The data collected was subjected to editing, coding and entry tasks/activities to ensure accuracy, consistency and completeness. The statistical package for social science package (SPSS) version 19 was used to analyse and interpret the collected data.

3.6.1 Analytical Model

This study used multiple linear regressions to determine to what extent is the total variation of the dependent variable influenced by the variation of the independent variables. The multiple linear regressions are as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \mu$$

Where:

Y= Financial performance (Measured by Return on Asset)

α = Constant (free term of equation)

β_i = Coefficients of independent variables *i* (which measures the responsiveness of \hat{Y} to unit change in variable *i*).

X_1 = Company size (log total assets)

X_2 = Leverage measured by (Total debt/ Average total assets)

X_3 = Companies age (Measured by number of years in operation)

X_4 = Working capital ratio (Measured by (CA-CL/Total sales))

X_5 = Companies growth measured by (CAGR_{TA})

X_6 = Dummy variable for Sin activities (1), Non Sin activities (0)

μ = Error term

3.6.2 Test of Significance

One sampled T-test was used to confirm whether the performance of Sin companies and Non Sin companies differs due to the influence of sin activities. The independent variables strength was tested at a confidence interval of 5%. This indicates that independent variables with a p value of less than 5% was explained to have a significant effect on the performance of companies while the p value more than 5% indicated insignificant effect of independent variable on the companies' performance. Correlation analysis was used to test the strength of relationship between the independent variables.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter focused on the analysis of the collected data from the Nairobi Securities Exchange of Kenya to establish the effects of sin activities on the financial performance of companies listed at NSE for the period between 2009 - 2013. The results were analysed using descriptive statistics, tabulated and graphically presented as shown in the following sections.

4.2 Findings

This section presents the descriptive results of this study, measures of central tendency, the trends analysis including log of assets, companies' age, leverage ratios, working capital ratio and compounded annual growth rate of total assets in Sin and Non sin companies.

4.2.1 Descriptive Statistics

Table 4.1 showed that non sin companies log of assets have a mean of 7.367 and standard deviation of 0.787 with sin activities having a mean of 7.39 and standard deviation of 0.394. Non sin companies' return on assets has a mean of 0.100 and standard deviation of 0.129 and sin companies has a mean of 0.13 and standard deviation of 0.0078. Non sin companies' leverage has a mean of 0.5930 and standard deviation of 0.301 and sin companies having a mean of 0.524 and standard deviation of 0.0144. Non sin companies' age has a mean of 2.98 and standard deviation of 1.61 with non-sin companies having a mean of 5.10 and standard deviation of 0.707. Non sin companies compounded annual growth rate of total assets has a mean of 1.62 and standard deviation of 0.725.

Table 4.1 Descriptive statistics

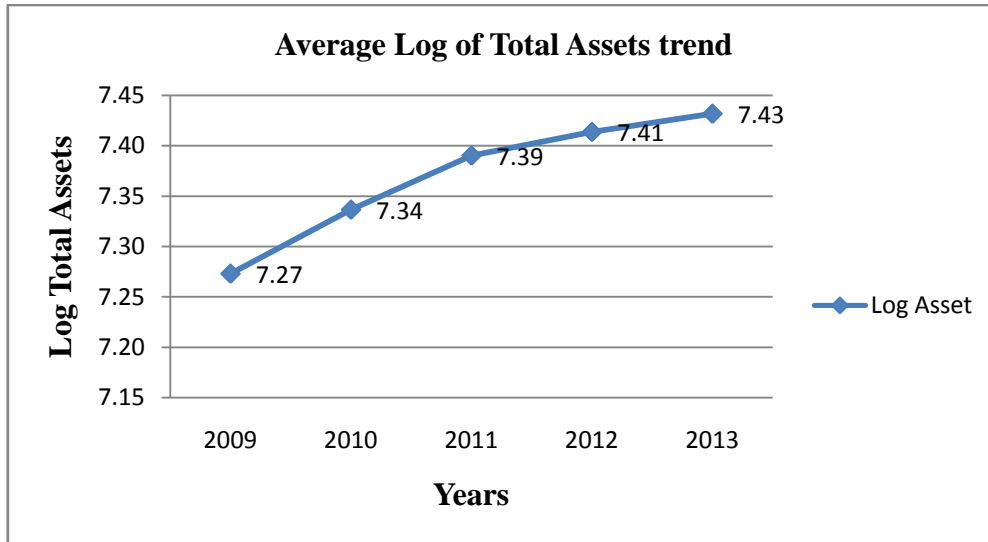
Variables	Dummy	Mean	Standard Deviation
Log Asset	Non sin companies	7.3671	.78709
	Sin companies	7.3870	.39382
Return on assets	Non sin companies	.1003	.12884
	Sin companies	.1925	.00778
Leverage	Non sin companies	.5930	.30120
	Sin companies	.5239	.01442
Companies Age	Non sin companies	2.9833	1.61017
	Sin companies	5.1000	.70711
Working capital Ratio	Non sin companies	.1277	.59854
	Sin companies	.0305	.00354
CAGRAs	Non sin companies	1.6180	.72488
	Sin companies	1.3610	.16122

Source: Researcher 2014

4.2.2 Annual Performance Measures Trends

Figure 4.1 represents average log of total asset, it was revealed that the log of total assets on average increases rapidly from 7.27 to 7.39 in 2011 with consistent minimal percentage increase in 2012 and 2013.

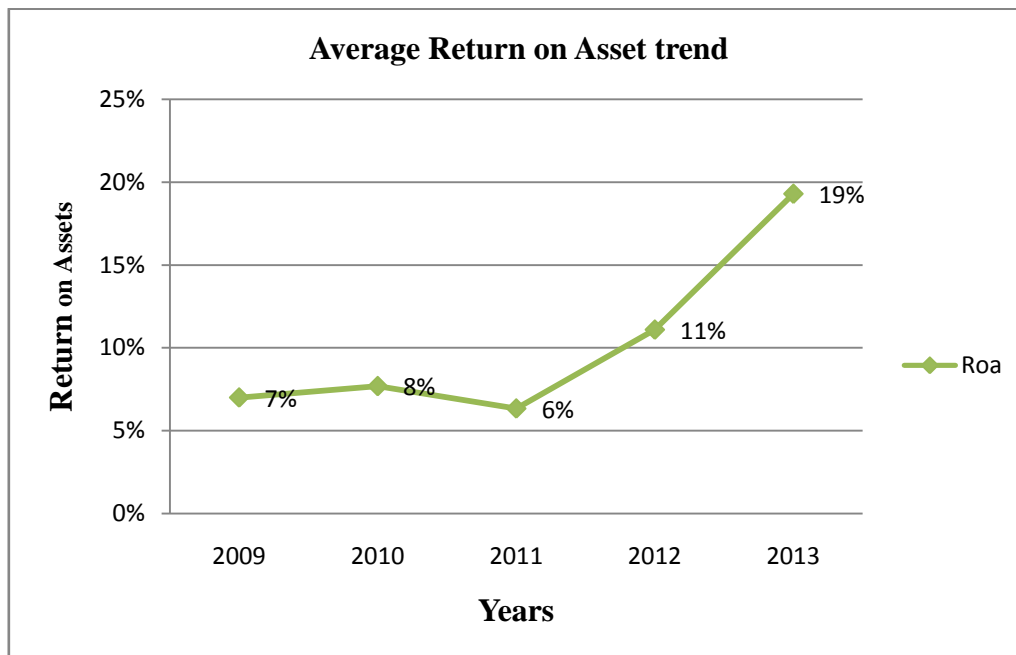
Figure 4.1 Average Log of total assets trend



Source: Research Findings

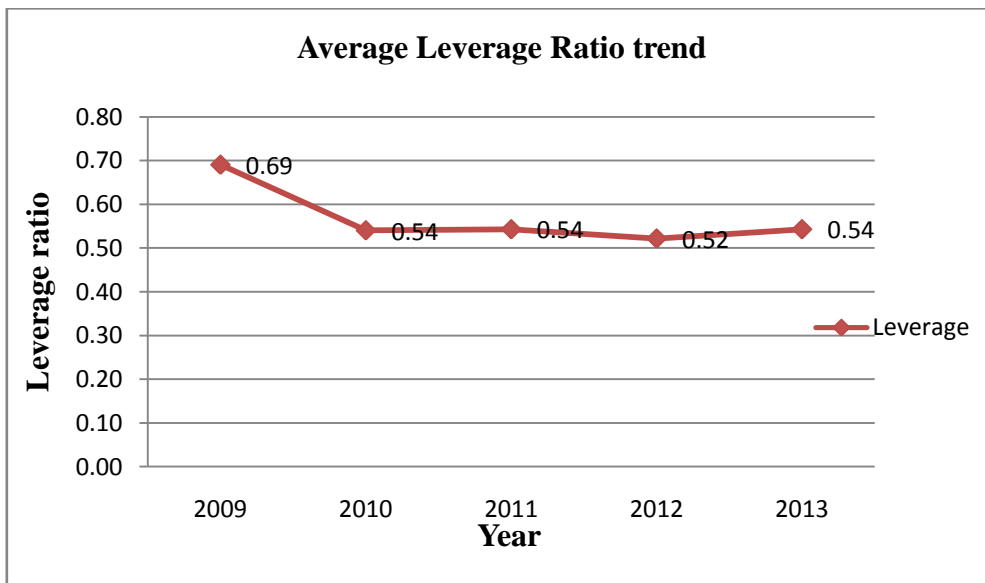
From the analysis of average return on total assets, it was found that the return on the assets increases by 1% in 2010 with a 2% drop in 2011. Furthermore the average companies return on asset significantly increases to 11% in 2012 and 19% in 2013.

Figure 4.2 Average Return on Assets trend



Source: Research Findings

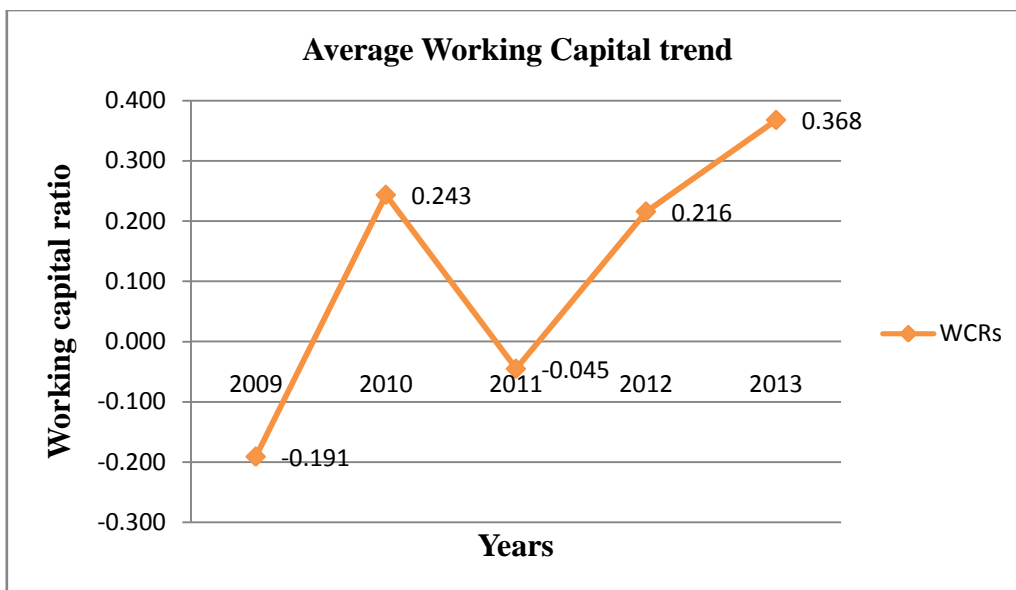
Figure 4.3 Average Leverage ratio trend



Source: Research Findings

From the analysis of companies average leverage ratio between 2009 and 2013, it was found that the leverage ratio decreases consistently from 0.69 to 0.52 in 2012 with slight increase in 2013 to 0.54.

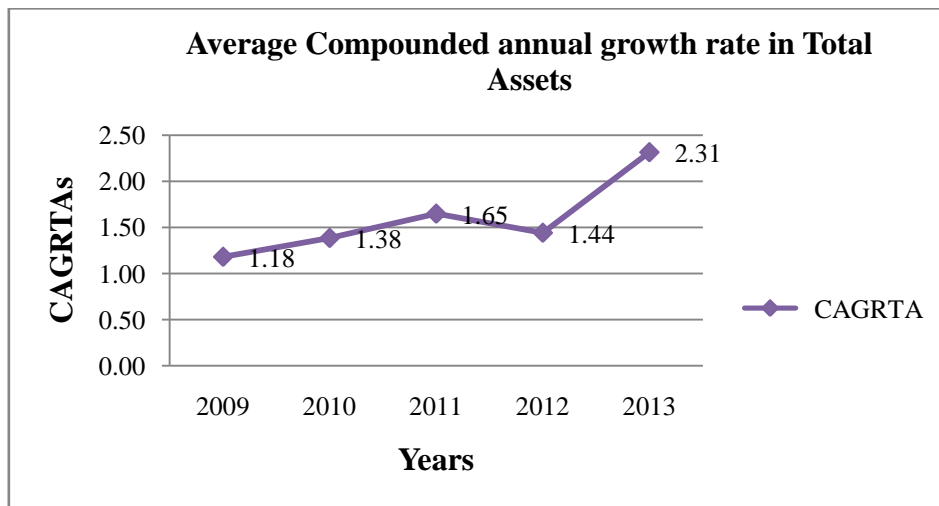
Figure 4.4 Working Capital Ratio trend



Source: Research Findings

From the analysis of company's working capital trend between 2009-2013, it was found that the working capital ratio increases consistently to 0.243 in 2010. Furthermore the working capital ratio drastically decreases to -0.045 in 2011 followed by significant increase in 2012 and 2013 respectively.

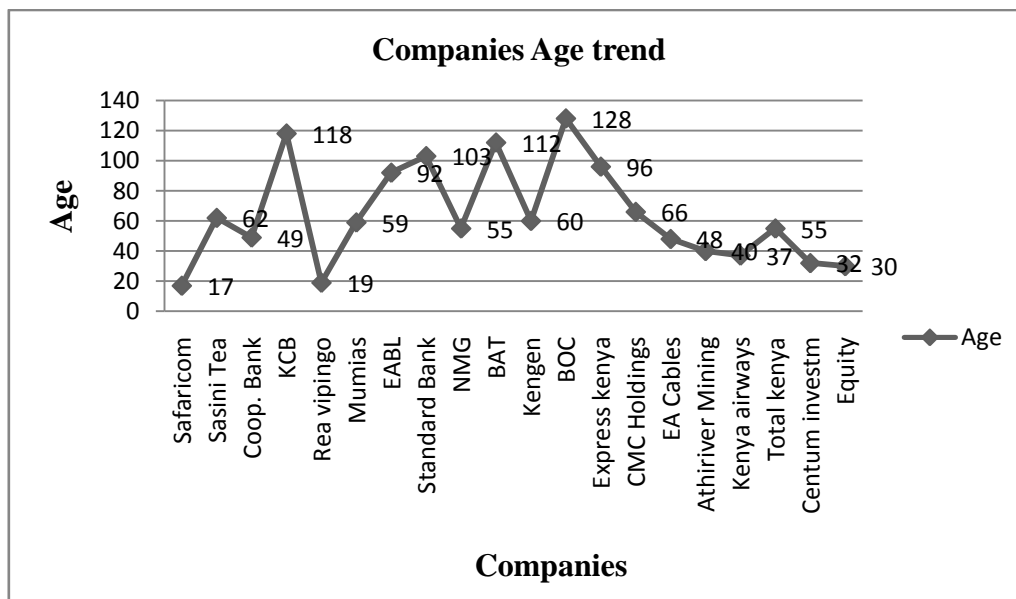
Figure 4.5 Average Compounded Annual Growth rate in Total Assets



Source: Research Findings

From the analysis of compounded annual growth rate of total assets, it was revealed that the growth in total assets increases significantly to 1.65 in 2011. Furthermore the growth rate decreases slightly to 1.44 in 2012 before it increases significantly to 2.31 in 2013.

Figure 4.6 Companies Age trend



Source: Research Findings

From the analysis of the companies years of existence, it was found that Kenya commercial bank, East African breweries limited, Express Kenya and Boc Kenya have been in operation for over 100 years with Sasini Tea, Mumias sugar, Nation media group, CMC holdings, Ea cables and total Kenya having been in operation for more than 50 years. Equity bank, Centum Kenya, Kenya airways, Athiriver mining, Rea vipingo and Cooperative bank having in operation for less than 50 years.

4.2.3 Test Statistics

This section tends to compare the mean difference of Sin and Non sin company's financial performance indicators at 95% confidence interval.

Table 4.2 One Sampled T-test

Variables	Test value 0			
	Dummy	Mean difference	Std. Error Mean	Sig. (2-tailed)
Log Asset	Non sin companies	7.36706	.18552	.000
	Sin companies	7.38696	.27847	.024
Return on assets	Non sin companies	.10033	.03037	.004
	Sin companies	.19250	.00550	.018
Leverage	Non sin companies	.59302	.07099	.000
	Sin companies	.52390	.01020	.012
Companies Age	Non sin companies	2.98333	.37952	.000
	Sin companies	5.10000	.50000	.062
Working capital Ratio	Non sin companies	.12772	.14108	.378
	Sin companies	.03050	.00250	.052
CAGRAs	Non sin companies	1.61800	.17085	.000
	Sin companies	1.36100	.11400	.053

Source: Research Findings

Table 4.2 showed one sampled T-test for the company's financial performance variables, from the analysis it was found that non sin companies have a mean of 7.37 and sin companies have a mean of 7.39. Non sin companies and sin companies are statistically significant with a p value less than 0.05. Return on asset of non-sin companies has a mean of 0.100 and sin companies have a mean of 0.193. Non sin companies and sin companies return on stock are statistically significant with a $p > 0.05$. Non sin companies and non-sin companies' leverage have a mean of 0.593 and 0.524 respectively. They are statistically significant with a $p > 0.05$. Non sin companies and sin companies' age have a mean of 2.98 and 5.1 respectively. Non sin companies' age is statistically significant. Working capital ratio for both non sin companies and sin companies are not statistically significant. Compounded annual growth rate for sin companies is not statistically significant with a $p > 0.05$.

Table 4.3 Correlation Analysis

Correlation analysis is used to establish if there exists a relationship between two variables which lies between (-) strong negative correlation and (+) perfect positive correlation. Six variables were generated using SPSS (Return on asset, leverage, company's age, working capital ratio, compounded annual growth rate and dummy variable).

		ROA	Log Asset	Leverage	Age	WCRS	CAgrtas	Dummy
ROA	Pearson Correlation	1	.177	-.189	.261	-.041	.100	.227
	Sig. (1-tailed)		.228	.213	.133	.432	.338	.168
	N	20	20	20	20	20	20	20
Log Asset	Pearson Correlation	.177	1	.543**	-.107	-.048	.273	.008
	Sig. (1-tailed)	.228		.007	.327	.420	.122	.486
	N	20	20	20	20	20	20	20
Leverage	Pearson Correlation	-.189	.543**	1	.001	.005	.131	-.074
	Sig. (1-tailed)	.213	.007		.498	.491	.290	.378
	N	20	20	20	20	20	20	20
Age	Pearson Correlation	.261	-.107	.001	1	.275	-.500*	.391*
	Sig. (1-tailed)	.133	.327	.498		.120	.012	.044
	N	20	20	20	20	20	20	20
WCRS	Pearson Correlation	-.041	-.048	.005	.275	1	-.161	-.053
	Sig. (1-tailed)	.432	.420	.491	.120		.249	.413
	N	20	20	20	20	20	20	20
CAgrtas	Pearson Correlation	.100	.273	.131	-.500*	-.161	1	-.114
	Sig. (1-tailed)	.338	.122	.290	.012	.249		.315
	N	20	20	20	20	20	20	20
Dummy	Pearson Correlation	.227	.008	-.074	.391*	-.053	-.114	1
	Sig. (1-tailed)	.168	.486	.378	.044	.413	.315	
	N	20	20	20	20	20	20	20

Source: Research Findings **. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

From the analysis of the correlation analysis, it was found that there exist a weak a positive correlation between return on assets and log of assets ($p= 0.177$, $p>0.05$). This implies that the total number of assets held by companies has minimal influence on the company's performance. The relationship between return on assets and leverage was found to be negative ($p= -0.189$, $p>0.05$). This implies that increase in companies leverage has negative implications on the company's overall performance. The study also showed that there exist a weak positive correlation between companies age and return on assets ($p= 0.261$, $p>0.05$). This shows that company's age has minimal significant influence on the company's performance. This study also found that there exist weak negative correlation between return on assets and working capital ratios ($p= -0.041$, $p>0.05$). There exists a positive correlation between assets growth and companies performance ($p= 0.100$, $p>0.05$). This shows that

increase in company's assets has minimal significant influence on the company's performance. This study also found that there exists a positive correlation between dummy variable and companies return on assets ($p = 0.227$, $p > 0.05$).

This study found that, there is a strong positive correlation between Log of assets and companies level of leverage ($p = 0.543$, $p < 0.05$). This implies that the increased level of companies leverage leads to increase in the total number of assets. There is a weak negative correlation between companies log of assets and companies age ($p = -0.107$, $p > 0.05$ and working capital ratios ($p = -0.048$, $p > 0.05$). there is positive correlation between compounded annual growth rate, dummy variable and log of assets. There exists a strong negative relationship between companies age and compounded annual growth rate of total assets ($p = -0.50$, $p < 0.05$). There is a significant relationship between companies age and dummy variables ($p = 0.391$, $p < 0.05$). The study also found that there is a negative correlation between working capital ratios and compounded annual growth rate ($p = -0.161$, $p > 0.05$) and dummy variable ($p = -0.05$, $p > 0.05$). There is a negative correlation between compounded annual growth rate and dummy variable ($p = -0.114$, $p > 0.05$).

4.2.4 Test of Model

Table 4.4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.551	.603	-.018	.12629

Source: Research Findings

Table 4.4 indicates that there is an R^2 value of 60.3%. This value indicates that the six independent variables explain 60.3% of the variance in the company's financial performance. It's very clear that these independent variables contribute to a large extent to the company's level of performance. It is therefore sufficiently to conclude that these variables significantly influence financial performance of companies given the unexplained variance is only 39.7%.

Table 4.5 Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.090	6	.015	2.943	.0498
	Residual	.207	13	.016		
	Total	.298	19			

Source: Research Findings

Given 5% level of significance, the numerator $df = 6$ and denominator $df = 13$, critical value 2.74, table 4.5 shows computed F value as 2.943. This confirms that overall the multiple regression model is statistically significant, in that it is a suitable prediction model for explaining how the selected independent variables affects the company's financial performance.

Table 4.6 Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	-.428	.328		-1.306	.214	-1.137	.280
Log Asset	.063	.048	.379	1.327	.027	-.040	.166
Leverage	-.187	.122	-.426	-1.526	.151	-.451	.077
Age	.033	.023	.443	1.458	.169	-.016	.083
WCRS	-.022	.054	-.098	-.400	.696	-.138	.095
CAGRTAS	.048	.050	.263	.946	.031	-.061	.156
DUMMY	.018	.106	.043	.167	.000	-.210	.246

Source: Research Findings

Where $x_1 = \text{Log of assets}$, $x_2 = \text{Leverage}$, $x_3 = \text{Companies age}$, $x_4 = \text{Working capital ratios}$, $x_5 = \text{Compounded annual growth rate of total assets}$ and $x_6 = \text{Dummy variable}$. Using a significance level of 5%, any independent variable having a significant value greater than 5% is considered not statistically significant. This study found that x_1 , x_6 and x_5 are statistically significant with x_2 , x_3 and x_4 with significance of more than 5% are not statistically significant. This reveals that x_1 , x_6 and x_5 are suitable predictors of company's performance. That means that for every unit increase in total assets the company's performance increases by 0.379 units.

4.3 Interpretation of Findings

The descriptive research design was adopted to reveal the effect of sin companies on the financial performance of companies listed at the Nairobi Securities Exchange. A sample 20 companies were selected to form a 20 share company index. The descriptive statistics showed that non sin companies log of assets has larger mean and wider dispersion compared to sin companies. Sin companies' return on assets which is the measure of the company's performance has larger mean but lower standard deviation compared to non-sin companies. This shows that sin companies performance fluctuates minimally compared to non-sin companies for the period considered for this study. Non sin companies' leverage has higher mean and larger standard deviation in relation to sin companies. This shows that the use of

debt financing by non-sin companies is not standardized the companies sometimes rely on the debt financing while sometime they don't use debt as the key financing option.

On the company's age, sin companies have higher mean compared to non-sin companies and lower dispersion. This shows that sin companies compared have been operating for many years compared to non-sin companies selected for this study with almost the same number of years compared to non-sin companies which showed greater differences for the years in operation. Working capital ratio which is the measure of the companies efficiency on the management of short term debts and short terms assets compared to total company sales or revenues showed that non sin companies has larger mean compared to sin companies with wider dispersion as well. Compounded annual growth rate for non-sin companies has larger mean and larger standard deviation compared to sin companies.

Average log of the total assets trend which is the measure of the company's total number of the assets showed an upward trend for the period considered for investigation in this study. This reveals that on average the total numbers of sin and non-sin companies' total numbers of assets increased consistently between 2009-2013. Despite increase in the total number of assets, the companies on average recorded a decrease between 2010 and 2011 before starting to increase significantly. The negative fluctuations are insignificant compared to favourable movements. On average the sin companies and non-sin companies leverage ratio decreases drastically for the period with insignificant increase in 2013. The working capital ratio for sin and non-sin companies fluctuates greatly for the period up to 2011 where the companies recorded negative efficiency before starting to increase to reflect operational efficiency on the management of short term debt and assets to generate revenues. The compounded annual growths rate of the total assets for the period studied showed a significant increase for the period up to 2011. The compounded annual growth rate of total assets dropped significantly in 2012 and later adopted an upward trend for the next one year.

Significantly sin companies recorded higher mean difference compared to non-sin companies for the total number of assets measured by the logarithm of the total assets. Significantly the sin companies have a higher mean difference on the average companies' return of assets. On average the non-sin companies have a higher mean difference on the use of debt to finance the company's operations. Non-significantly sin companies have a higher mean difference compared to sin companies. Non stock companies working capital ratio records higher mean difference although the significance was greater than 0.05% confidence interval. Significantly

non sin companies compounded annual growth rate has a higher mean difference compared to sin companies on average.

From the test of the model, it was found that the selected independent variable which influences the company's performance for this study explains 60% of the dependent variable. This clearly shows that these variables greatly influence companies' performance to larger extent. With an F statistics of 2.943 its very clear that the multiple regression model for this study is statistically significant and can be used as a suitable prediction model to explain how the selected variables influences company's financial performance. From the regression model, it's very clear that positively total assets measured by the logarithm of assets, company's age measured by the number of years in operation and compounded annual growth rate of total assets affects the company's performance measured by the return on assets by 37.9%, 44.3% and 26.3% respectively. Negatively leverage and working capital ratio affects the company's financial performance by 42.6% and 9.8% respectively.

Companies' size is an important indicator for the company's performance. Size can have a positive impact on the financial performance of the companies (Mathur and Kenyon, 1998). This study confirms that the total number of assets as measured by the logarithm of assets has a positive impact on the company's financial performance. Abdennadher (2006) in his study revealed that debt has a significant negative influence on the company's financial performance. This study confirms that the use of more debt for sin and non-sin companies have a weak negative influence on the company's financial performance.

According to (Batra and Dess, 1999) the firm age has an influence on the company's financial performance with Sorensen and Stuart confirming that organizational inertia of the company operating in the old firms tend to make them inflexible and unable to appreciate changes in the environment with newer and companies take away market share in spite of challenges. This study found that the number of the years the company has been in operation has a positive influence due to the benefits accrued including adequate financing, larger asset base, recognized brands names, corporate reputation and image.

Deloof (2003) confirmed that there is a negative relationship between the companies' gross operating profit and account receivables, inventory and accounts payables. Karaduman (2011) on his study found that there exist a negative relationship between return on assets and with day's receivable, days payable, day's inventory and cash conversion cycle. This study found that there exist a negative correlation between the company's financial performance

measured by return on assets and working capital ratio. Growth is an important component influencing valuation of the companies it is measured by the compounded annual growth rate of total assets and total sales. High growth rate companies are expected to have a higher future profit margin. This study found that compounded annual growth rate of total assets has a positive impact on the company's financial performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter tends to give the summary of the results in this study, conclusions and recommendations for practice and areas for further research.

5.2 Summary

The objective of this was to determine the effect of sin companies on the financial performance of the companies listed at Nairobi Securities exchange as at December 2013. From the analysis of the descriptive statistics, it was found that sin companies log of assets, return on assets, companies age, compounded annual growth rate of total assets mean is greater compared to non sin companies while leverage average or use of more debt to finance non sin companies operations is higher compared to that of sin companies. The findings also revealed that log of total assets on average increases consistently for the period considered for analysis in this study while average return on total assets increases insignificantly in 2010 with a drop in 2011 and a significant increase thereafter. On average leverage ratio decreases consistently for the first four years considered for analysis with a significant increase in 2013 while on average working capital ratio fluctuates significantly for the period. On average compounded annual growth rate of total assets increases significantly up to 2011. Furthermore the growth rate decreases slightly in 2012 before it significantly increases in 2013.

From the analysis of the dependent and independent variables relationships it was found that there exist a weak a positive correlation between companies' age, working capital ratio, log of assets and return on assets which is the measure of the company's financial performance. The relationship between return on assets and leverage was found to be negative. The findings also revealed that there exists a positive correlation between compounded annual growth rate of total assets, dummy variable and companies' financial performance. Finally this study also revealed the issue of multicollinearity among the independent variables. The findings revealed that Log of assets, compounded annual growth rate of total assets and companies level of leverage are highly correlated but there exist a negative correlation between companies log of assets, working capital ratios and companies age.

5.2 Conclusion

From the test of the model, it was found that independent variable explains 60% of the dependent variable with 40% attributed to other factors. The F statistics of 2.943 clearly shows that the multiple regression models is statistically significant and can be used as a suitable prediction model to explain how the selected variables affect company's financial performance. From the regression model, it's very clear that total assets measured by the logarithm of assets, company's age measured by the number of years in operation and compounded annual growth rate of total assets affects the sin and non-sin company's financial performance positively while the use of debt influences companies' performance negatively.

Companies' size is an important indicator for the company's performance. According to this study companies size measured by the total number of assets has a positive impact on the financial performance of the sin and non-sin companies. This study also concludes that the number of years the company has been in operation has a positive influence on financial performance due to the benefits accrued including adequate financing, larger asset base, recognized brands names, corporate reputation and image. In conclusion this study found that there is a negative relationship between the company's financial performance measured by return on assets and working capital ratio while the compounded annual growth rate of total assets has a positive effect on the company's financial performance.

Lastly, using a significance level of 5%, this study found that log of assets, dummy variable and compounded annual growth rate of total assets are statistically significant with leverage ratio, and companies' age and working capital ratio with a significance of more than 5% are not statistically significant. This reveals that total assets base and compounded annual growth rate of total asset are suitable predictors of company's financial performance. This means that for every unit increase in these variables the company's financial performance also increases by equivalent margin.

5.3 Recommendations for the Policy

The study recommends that clear financial management strategies should be set aside to address key critical financial decisions arising in the company particularly developing good financial management technique o provide adequate responses to challenges and problems by focusing on internal business processes and financial benchmarks.

Listed companies should in addition have clear framework on how financial management decisions are made and the protocol to be followed to make sure the right decisions are made to meet the benefit of the investors and maintain the companies going concern. This will enable to minimize any conflict of interest which might lead to disservice or dissatisfaction.

Companies should focus on working capital management issues to improve its effectiveness and efficiency. Operating cycle which involves accounts receivable days, inventory days and accounts payable days should be well management to ensure efficiency and effectiveness to maintain steady cash flows to finance companies operating activities.

Regarding that there is no optimal capital structure acceptable to all companies, the capital structure mix influences the performance of company's direction to large extent. The impact depends on the company's mix of debt and equity. This study recommends that before the company decides to finance its operations fully by use of debt, it should assess its general and specific effect on companies ' financial performance.

5.4 Limitations for the Study

Limited time used and resource constraints, which is includes finances move from one point to another when collecting data for this study was inevitable and thus only 20 listed companies were considered and involved in this study.

Another limitation in the course of the study was the limited access to the information especially the primary data which led to the use of secondary data in this study which was difficult and challenging to edit code and analyse.

The analysis model involved in this study was challenging and inadequate to provide adequate explanation on the relationship between performance indicators and financial performance because it relied on the limited number of factors while performance depends on countless factors both internal and external.

5.5 Areas for Further Research

For this kind of research, more time need to be spent to be able to collect adequate information and analyse it to provide more variables which influence the financial performance of companies. In addition, a comparative study is suggested to be carried out with companies listed at Nairobi securities exchange addressing the effects of sin and non-sin companies from different sectors.

The study mainly used secondary data to gather information for the research project. Further researches should be done through primary data. Primary data analysis is first hand and accurate and reduces biases that would otherwise be experienced when using secondary data.

A case study can be conducted based on one of the sin company in Kenya. Upon undertaking a case study, the researcher should evaluate the results to test whether there is consistency and uniformity from the past researches and this research as well. Finally the researcher should either replicate the results achieved regarding the effect of sin companies on sin companies.

This study also suggest that further study especially a comparative study can be conducted by comparing the factors affecting the financial performance of quoted companies from different geographical areas and remedies for the same and more advanced analysis model employed to show the exact relationship and differences on the performance such as t-test, chi-square and correlation analysis which captures many factors possible.

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Appendix I Listed Companies As at 31st December 2013

AGRICULTURE

- 1) Eaagads Ltd
- 2) Kakuzi Ltd
- 3) Kapchorua Tea Co. Ltd
- 4) Limuru Tea Co. Ltd
- 5) Rea Vipingo Plantations Ltd
- 6) Sasini Ltd
- 7) Williamson Tea Kenya Ltd

AUTOMOBILE AND ACCESSORIES

- 8) Car & General (K) Ltd
- 9) CMC Holdings Ltd
- 10) Marshalls (E.A.) Ltd
- 11) Sameer Africa Ltd

BANKING

- 12) Barclays Bank of Kenya Ltd
- 13) CFC Stanbic of Kenya Holdings Ltd
- 14) Diamond Trust Bank Kenya Ltd
- 15) Equity Bank Ltd
- 16) Housing Finance Co. Kenya Ltd
- 17) I&M Holdings Ltd
- 18) Kenya Commercial Bank Ltd
- 19) National Bank of Kenya Ltd
- 20) NIC Bank Ltd
- 21) Standard Chartered Bank Kenya Ltd
- 22) Co-operative Bank of Kenya Ltd

COMMERCIAL AND SERVICES

- 23) Express Kenya Ltd
- 24) Hutchings Biemer Ltd
- 25) Kenya Airways Ltd

- 26) Longhorn Kenya Ltd
- 27) Nation Media Group Ltd
- 28) Scan group Ltd
- 29) Standard Group Ltd
- 30) TPS Eastern Africa Ltd
- 31) Uchumi Supermarket Ltd

CONSTRUCTION AND ALLIED

- 32) ARM Cement Ltd
- 33) Bamburi Cement Ltd
- 34) Crown Paints Kenya Ltd
- 35) E.A.Cables Ltd
- 36) E.A.Portland Cement Co. Ltd

ENERGY AND PETROLEUM

- 37) KenGen Co. Ltd
- 38) KenolKobil Ltd
- 39) Kenya Power & Lighting Co Ltd
- 40) Kenya Power & Lighting Co Ltd
- 41) Total Kenya Ltd
- 42) Umeme Ltd

INSURANCE

- 43) British-American Co.(Kenya) Ltd
- 44) CIC Insurance Group Ltd
- 45) Jubilee Holdings Ltd
- 46) Kenya Re Insurance Corporation Ltd
- 47) Liberty Kenya Holdings Ltd
- 48) Pan Africa Insurance Holdings Ltd

INVESTMENT

- 49) Centum Activities Co Ltd
- 50) Olympia Capital Holdings Ltd

51) Trans-Century Ltd

MANUFACTURING AND ALLIED

52) A.Baumann & Co Ltd

53) B.O.C Kenya Ltd

54) British American Tobacco Kenya Ltd

55) Carbacid Investments Ltd

56) East African Breweries Ltd

57) Eveready East Africa Ltd

58) Kenya Orchards Ltd

59) Mumias Sugar Co. Ltd

60) Unga Group Ltd

TELECOMMUNICATION AND TECHNOLOGY

61) Safaricom Ltd

62) Access Kenya Group

GROWTH ENTERPRISE MARKET SEGMENT (GEMS)

63) Home Afrika Ltd

Source: NSE Booklet 2013

Appendix II Sampled Listed Companies

- 1) Safaricom Limited
- 2) Sasini tea
- 3) Co-operative Bank
- 4) Kenya commercial bank
- 5) Rea vipingo
- 6) Mumias sugar
- 7) East Africa brewing limited
- 8) Standard Bank
- 9) Nation media group
- 10) British American tobacco limited
- 11) Kengen
- 12) BOC
- 13) Express Kenya
- 14) CMC Holdings
- 15) EA Cables
- 16) Athiriver Mining
- 17) Kenya airways
- 18) Total Kenya
- 19) Centum activities
- 20) Equity bank

Appendix III Data Schedule

Year	Company	Total Assets	Log Assets	Total debt	Net Income	ROA	Leverage	Current Asset	Current Liability	Total sales	WCRs	CAGRTAS	Dummy
2009	Safaricom	91,682,324	7.96229	40,535,244	10,536,760	0.11	0.44	17,502,526	35,760,664	70,479,587.00	-0.26	1.23	0
2010	Safaricom	104,120,850	8.01754	41,825,732	15,148,038	0.15	0.40	22,570,645	33,819,970	83,960,677.00	-0.13	1.29	0
2011	Safaricom	113,854,762	8.05635	46,400,671	13,158,973	0.12	0.41	21,701,296	34,117,726	94,832,227.00	-0.13	1.31	0
2012	Safaricom	121,899,677	8.08600	49,817,979	12,627,607	0.10	0.41	21,194,195	37,615,900	106,995,529.00	-0.15	1.31	0
2013	Safaricom	124,679,542	8.09580	51,746,684	17,539,810	0.14	0.42	22,087,213	36,412,789	124,287,856.00	-0.12	1.12	0
	Average	111,247,431	8.04359	46,065,262	13,802,238	0.12	0.42	21,011,175	35,545,410	96,111,175	(0.16)	1.2527	0
2009	Sasini Tea	7,998,233	6.90	2,336,411	533,032	0.07	0.29	1,041,011	407,361	2,182,090.00	0.29	1.18	0
2010	Sasini Tea	9,060,061	6.96	2,570,082	993,729	0.11	0.28	1,227,656	519,045	2,297,927.00	0.31	1.28	0
2011	Sasini Tea	9,462,027	6.98	2,699,855	450,347	0.05	0.29	1,243,233	583,435	2,665,877.00	0.25	1.14	0
2012	Sasini Tea	8,922,980	6.95	2,496,178	(124,113)	(0.01)	0.28	1,109,871	585,628	2,779,883.00	0.19	0.79	0
2013	Sasini Tea	9,054,366	6.96	2,661,455	91,689	0.01	0.29	1,295,043	721,249	2,816,834.00	0.20	1.01	0
	Average	8,899,533	6.9487	2,552,796	388,937	0.04	0.29	1,183,363	563,344	2,548,522	0.25	1.0809	0
2009	Coop. Bank	110,678,000	8.04	95,022,000	2,968,000	0.03	0.86	75,468,000	92,529,000	11,718,000.00	-1.46	1.33	0
2010	Coop. Bank	154,339,000	8.19	134,359,000	4,580,000	0.03	0.87	107,394,000	129,226,000	15,671,000.00	-1.39	1.94	0
2011	Coop. Bank	168,312,000	8.23	147,360,000	5,366,000	0.03	0.88	131,025,000	144,514,000	18,306,000.00	-0.74	1.30	0
2012	Coop. Bank	200,588,000	8.30	171,221,000	7,724,000	0.04	0.85	132,188,000	163,149,000	23,781,000.00	-1.30	2.02	0
2013	Coop. Bank	231,215,000	8.36	19,431,000	9,108,000	0.04	0.08	213,023,000	191,139,000	27,890,000.00	0.78	2.03	0

	Average	173,026,400	8.2250	113,478,600	5,949,200	0.03	0.66	131,819,600	144,111,400	19,473,200	(0.82)	1.7239	0
2009	KCB	194,777,835	8.29	172,207,623	4,083,871	0.02	0.88	156,287,287	169,697,738	17,968,455.00	-0.75	1.02	0
2010	KCB	251,356,200	8.40	212,226,429	7,177,973	0.03	0.84	202,570,382	208,031,618	23,109,793.00	-0.24	1.67	0
2011	KCB	330,716,159	8.52	286,351,132	10,981,046	0.03	0.87	261,337,138	273,413,998	28,501,387.00	-0.42	2.28	0
2012	KCB	367,379,285	8.57	314,039,726	12,203,531	0.03	0.85	295,460,218	297,370,956	43,082,218.00	-0.04	1.52	0
2013	KCB	381,241,300	8.58	322,318,021	647,992,000	1.70	0.85	302,268,475	307,214,879	57,256,987.00	-0.09	1.20	0
	Average	305,094,156	8.4711	261,428,586	136,487,684	0.45	0.86	243,584,700	251,145,838	33,983,768	(0.31)	1.5376	0
2009	Rea vipingo	1,414,084	6.15	438,634	148,949	0.11	0.31	502,524	224,412	1,371,000.00	0.20	0.87	0
2010	Rea vipingo	1,707,016	6.23	717,917	67,355	0.04	0.42	586,491	436,849	1,441,668.00	0.10	1.46	0
2011	Rea vipingo	2,288,740	6.36	819,880	467,196	0.20	0.36	894,146	425,236	2,115,616.00	0.22	2.41	0
2012	Rea vipingo	2,376,618	6.38	654,473	380,433	0.16	0.28	897,556	257,984	2,571,725.00	0.25	1.16	0
2013	Rea vipingo	2,797,430	6.45	701,560	410,236	0.15	0.25	1,040,887	220,663	2,570,103.00	0.32	2.26	0
	Average	2,116,778	6.3130	666,493	294,834	0.14	0.31	784,321	313,029	2,014,022	0.22	1.6312	0
2009	Mumias	17,475,715	7.24	7,436,246	1,609,972	0.09	0.43	5,111,932	3,760,339	11,791,708.00	0.11	1.23	0
2010	Mumias	18,081,787	7.26	7,334,258	1,572,383	0.09	0.41	6,495,834	3,250,021	15,617,738.00	0.21	1.07	0
2011	Mumias	22,927,399	7.36	8,700,509	1,933,225	0.08	0.38	6,511,659	2,961,691	15,795,300.00	0.22	2.04	0
2012	Mumias	27,400,113	7.44	11,676,427	20,126,791	0.73	0.43	7,171,360	5,720,655	15,542,686.00	0.09	2.04	0
2013	Mumias	32,145,457	7.51	16,254,781	18,795,622	0.58	0.51	8,214,758	6,514,478	16,421,346.00	0.10	2.22	0
	Average	23,606,094	7.3610	10,280,444	8,807,599	0.37	0.44	6,701,109	4,441,437	15,033,756	0.15	1.7213	0

2009	EABL	34,546,993	7.54	12,098,470	8,262,464	0.24	0.35	15,948,710	9,432,296	34,407,715.00	0.19	1.06	1
2010	EABL	38,218,440	7.58	14,408,245	8,837,560	0.23	0.38	17,358,873	11,684,390	38,679,196.00	0.15	1.22	1
2011	EABL	50,330,635	7.70	18,846,495	9,023,660	0.18	0.37	16,320,457	15,509,186	44,895,037.00	0.02	2.28	1
2012	EABL	54,584,316	7.74	25,886,200	11,186,113	0.20	0.47	18,057,773	22,483,782	55,522,166.00	-0.08	1.38	1
2013	EABL	58,556,053	7.77	50,121,863	6,944,745	0.12	0.86	18,593,102	26,606,848	59,061,875.00	-0.14	1.42	1
	Average	47,247,287	7.6654	24,272,255	8,850,908	0.19	0.51	17,255,783	17,143,300	46,513,198	0.03	1.4753	1
2009	Standard Bank	123,778,972	8.09	109,786,817	4,732,754	0.04	0.89	119,170,838	105,704,965	9,347,475.00	1.44	1.25	0
2010	Standard Bank	142,746,249	8.15	122,415,127	5,376,191	0.04	0.86	132,716,343	115,436,440	9,777,689.00	1.77	1.33	0
2011	Standard Bank	164,046,624	8.21	143,352,168	5,836,821	0.04	0.87	152,761,823	139,176,228	12,011,253.00	1.13	1.52	0
2012	Standard Bank	195,352,756	8.29	164,599,942	8,069,533	0.04	0.84	185,046,701	159,330,315	19,375,477.00	1.33	2.01	0
2013	Standard Bank	197,114,568	8.29	179,845,678	18,949,300	0.10	0.91	186,024,786	160,458,795	20,145,786.00	1.27	1.05	0
	Average	164,607,834	8.2095	143,999,946	8,592,920	0.05	0.87	155,144,098	136,021,349	14,131,536	1.39	1.4309	0
2009	NMG	6,572,400	6.82	1,858,700	1,119,200	0.17	0.28	3,765,600	1,769,400	8,189,800.00	0.24	0.99	0
2010	NMG	6,664,000	6.82	2,553,100	1,538,400	0.23	0.38	5,076,800	2,553,100	9,602,500.00	0.26	1.03	0
2011	NMG	7,975,200	6.90	2,693,900	1,203,300	0.15	0.34	5,855,100	2,530,900	11,245,800.00	0.30	1.71	0
2012	NMG	8,816,300	6.95	3,353,900	2,510,300	0.28	0.38	7,248,200	3,216,700	12,346,800.00	0.33	1.49	0
2013	NMG	11,444,200	7.06	3,200,800	2,533,200	0.22	0.28	7,854,300	3,116,400	13,373,700.00	0.35	3.69	0
	Average	8,294,420	6.9094	2,732,080	1,780,880	0.21	0.33	5,960,000	2,637,300	10,951,720	0.30	1.7828	0

2009	BAT	10,553,206	7.02	5,881,130	1,478,431	0.14	0.56	4,244,326	4,333,675	18,719,542.00	0.00	1.02	1
2010	BAT	11,121,561	7.05	4,357,249	1,767,236	0.16	0.39	4,804,289	4,106,653	22,603,910.00	0.03	1.11	1
2011	BAT	13,750,545	7.14	7,338,118	3,097,755	0.23	0.53	6,979,714	5,340,629	28,818,391.00	0.06	1.89	1
2012	BAT	15,176,495	7.18	8,078,578	3,270,852	0.22	0.53	7,129,828	6,052,680	30,503,560.00	0.04	1.48	1
2013	BAT	14,236,458	7.15	8,975,623	3,256,100	0.23	0.63	7,214,568	5,621,450	33,145,879.00	0.05	0.73	1
	Average	12,967,653	7.1085	6,926,140	2,574,075	0.20	0.53	6,074,545	5,091,017	26,758,256	0.03	1.2469	0
2009	Kengen	108,603,879	8.04	98,100,651	2,070,913	0.02	0.90	12,748,759	58,677,743	12,652,388.00	-3.63	1.02	0
2010	Kengen	150,566,886	8.18	80,036,018	3,286,487	0.02	0.53	32,849,414	6,969,815	10,998,429.00	2.35	1.92	0
2011	Kengen	160,993,290	8.21	19,288,407	2,080,121	0.01	0.12	19,539,034	11,256,593	14,389,027.00	0.58	1.22	0
2012	Kengen	163,144,873	8.21	92,965,319	2,822,600	0.02	0.57	22,288,066	15,000,957	15,999,078.00	0.46	1.05	0
2013	Kengen	188,673,282	8.28	121,999,724	5,250,136	0.03	0.65	25,127,810	17,672,629	17,722,192.00	0.42	2.07	0
	Average	154,396,442	8.1817	82,478,024	3,102,051	0.02	0.53	22,510,617	21,915,547	14,352,223	0.03	1.4566	0
2009	BOC	1,988,401	6.30	454,607	153,907	0.08	0.23	1,988,401	367,524	1,285,373.00	1.26	0.97	0
2010	BOC	2,019,810	6.31	498,425	79,337	0.04	0.25	2,019,810	402,014	1,155,379.00	1.40	1.03	0
2011	BOC	1,816,803	6.26	488,252	150,604	0.08	0.27	1,816,803	458,790	1,205,372.00	1.13	0.73	0
2012	BOC	1,989,541	6.30	534,730	197,374	0.10	0.27	1,989,541	523,229	1,294,550.00	1.13	1.44	0
2013	BOC	987,456	5.99	321,478	189,451	0.19	0.33	1,546,879	451,846	1,345,678.00	0.81	0.03	0
	Average	1,760,402	6.2313	459,498	154,135	0.09	0.26	1,872,287	440,681	1,257,270	1.15	0.8389	0
2009	Express Kenya	1,304,116	6.12	891,663	15,070	0.01	0.68	153,785	501,750	892,928.00	-0.39	0.99	0

2010	Express Kenya	1,341,699	6.13	949,854	(28,091)	(0.02)	0.71	179,082	559,941	856,512.00	-0.44	1.06	0
2011	Express Kenya	766,798	5.88	611,522	(229,088)	(0.30)	0.80	137,663	409,479	450,324.00	-0.60	0.19	0
2012	Express Kenya	495,609	5.70	297,322	13,028	0.03	0.60	163,985	161,491	229,908.00	0.01	0.17	0
2013	Express Kenya	402,453	5.60	321,458	18,745	0.05	0.80	178,214	124,568	307,846.00	0.17	0.35	0
	Average	862,135	5.8855	614,364	(42,067)	(0.05)	0.71	162,546	351,446	547,504	(0.25)	0.5520	0
2009	CMC Holdings	13,293,168	7.12	8,020,021	539,609	0.04	0.60	10,887,567	7,560,184	11,728,127.00	0.28	1.11	0
2010	CMC Holdings	14,667,707	7.17	9,212,728	406,671	0.03	0.63	12,224,987	8,788,430	12,726,920.00	0.27	1.22	0
2011	CMC Holdings	14,579,112	7.16	9,433,683	(181,146)	(0.01)	0.65	12,308,768	9,002,281	11,805,399.00	0.28	0.98	0
2012	CMC Holdings	12,957,113	7.11	7,214,705	105,355	0.01	0.56	10,057,113	6,541,365	11,738,774.00	0.30	0.62	0
2013	CMC Holdings	13,114,256	7.12	7,021,456	131,245	0.01	0.54	11,546,879	4,213,689	11,065,874.00	0.66	1.06	0
	Average	13,722,271	7.1368	8,180,519	200,347	0.01	0.60	11,405,063	7,221,190	11,813,019	0.36	0.9982	0
2009	EA Cables	3,543,383	6.55	1,882,603	462,760	0.13	0.53	1,699,156	1,247,084	2,811,861.00	0.16	1.16	0
2010	EA Cables	4,518,445	6.65	2,272,136	296,033	0.07	0.50	1,795,686	1,399,362	3,604,366.00	0.11	1.63	0
2011	EA Cables	4,993,032	6.70	2,719,200	183,850	0.04	0.54	2,407,504	20,744,312	4,971,665.00	-3.69	1.35	0
2012	EA Cables	6,248,642	6.80	3,323,613	314,730	0.05	0.53	3,031,439	2,532,226	4,300,608.00	0.12	2.45	0
2013	EA Cables	4,857,086	6.69	2,937,295	398,200	0.08	0.60	2,912,640	2,225,893	4,502,964.00	0.15	0.28	0
	Average	4,832,118	6.6770	2,626,969	331,115	0.07	0.54	2,369,285	5,629,775	4,038,293	(0.63)	1.3753	0
2009	Athiriver Mining	12,141,091	7.08	8,012,161	645,774	0.05	0.66	3,362,746	3,353,762	5,144,822.00	0.00	1.91	0
2010	Athiriver Mining	16,564,900	7.22	11,638,041	1,075,268	0.06	0.70	4,240,062	3,206,460	5,964,670.00	0.17	1.86	0

2011	Athiriver Mining	20,516,040	7.31	14,413,414	1,150,498	0.06	0.70	3,723,221	4,420,053	8,180,992.00	-0.09	1.90	0
2012	Athiriver Mining	26,953,100	7.43	19,832,580	1,245,638	0.05	0.74	7,936,410	6,502,840	11,400,569.00	0.13	2.98	0
2013	Athiriver Mining	29,321,456	7.47	21,478,631	1,456,203	0.05	0.73	9,214,568	7,214,232	11,322,487.00	0.18	1.52	0
	Average	21,099,317	7.3027	15,074,965	1,114,676	0.05	0.71	5,695,401	4,939,469	8,402,708	0.08	2.0350	0
2009	Kenya airways	75,979,000	7.88	254,303,000	(4,083,000)	(0.05)	3.35	19,709,000	217,220,000	71,829,000.00	-2.75	0.99	0
2010	Kenya airways	73,263,000	7.86	53,290,000	2,035,000	0.03	0.73	17,860,000	20,580,000	70,743,000.00	-0.04	0.93	0
2011	Kenya airways	78,743,000	7.90	55,600,000	3,538,000	0.04	0.71	23,622,000	22,214,000	85,836,000.00	0.02	1.24	0
2012	Kenya airways	77,432,000	7.89	54,409,000	1,660,000	0.02	0.70	21,833,000	23,756,000	107,897,000.00	-0.02	0.94	0
2013	Kenya airways	122,670,000	8.09	91,461,000	(7,864,000)	(0.06)	0.75	28,608,000	50,841,000	98,860,000.00	-0.22	9.98	0
	Average	85,617,400	7.9239	101,812,600	(942,800)	(0.01)	1.19	22,326,400	66,922,200	87,033,000	(0.60)	2.8150	0
2009	Total Kenya	31,528,196	7.50	22,566,005	482,585	0.02	0.72	20,745,441	18,588,005	41,311,598.00	0.05	2.17	0
2010	Total Kenya	30,375,677	7.48	20,795,824	916,205	0.03	0.68	20,114,577	17,090,899	79,206,640.00	0.04	0.93	0
2011	Total Kenya	35,198,166	7.55	26,003,348	(71,436)	(0.00)	0.74	25,338,951	22,982,764	105,590,360.00	0.02	1.56	0
2012	Total Kenya	32,980,604	7.52	6,270,061	(202,142)	(0.01)	0.19	23,348,459	17,933,163	119,788,989.00	0.05	0.77	0
2013	Total Kenya	28,415,784	7.45	8,745,621	1,312,277	0.05	0.31	26,487,963	14,236,871	154,626,092.00	0.08	0.47	0
	Average	31,699,685	7.4999	16,876,172	487,498	0.02	0.53	23,207,078	18,166,340	100,104,736	0.05	1.1800	0
2009	Centum invest	6,397,298	6.81	537,906	313,180	0.05	0.08	165,968	537,906	475,653.00	-0.78	0.79	0
2010	Centum invest	8,255,971	6.92	309,804	1,093,757	0.13	0.04	516,912	309,804	1,080,790.00	0.19	1.67	0
2011	Centum invest	12,301,576	7.09	2,742,199	2,292,383	0.19	0.22	3,801,961	2,742,199	2,294,429.00	0.46	3.31	0

2012	Centum invest	11,567,701	7.06	1,526,459	1,189,405	0.10	0.13	358,489	526,459	1,366,675.00	-0.12	0.78	0
2013	Centum invest	18,961,552	7.28	5,318,811	2,509,396	0.13	0.28	1,762,594	339,616	3,905,657.00	0.36	11.83	0
	Average	11,496,820	7.0308	2,087,036	1,479,624	0.13	0.18	1,321,185	891,197	1,824,641	0.02	3.6763	0
2009	Equity	100,812,000	8.00	77,904,000	4,234,000	0.04	0.77	124,568,000	114,236,540	5,278,000.00	1.96	1.28	0
2010	Equity	143,018,000	8.16	115,814,000	7,132,000	0.05	0.81	136,524,000	138,785,000	9,045,000.00	-0.25	2.01	0
2011	Equity	196,294,000	8.29	162,009,000	10,325,000	0.05	0.83	178,956,400	177,861,000	12,834,000.00	0.09	2.59	0
2012	Equity	243,170,000	8.39	200,254,000	12,080,000	0.05	0.82	221,546,870	193,215,000	17,420,000.00	1.63	2.36	0
2013	Equity	277,729,000	8.44	226,174,000	13,278,000	0.05	0.81	263,384,000	200,012,000	31,890,000.00	1.99	1.94	0
	Average	192,204,600	8.2563	156,431,000	9,409,800	0.05	0.81	184,995,854	164,821,908	15,293,400	1.08	2.0349	0

Appendix IV Average Data Schedule

Company	Total Assets	Log Assets	Total debt	Net Income	ROA	Leverage	Age	Current Asset	Current Liability	Total sales	WCRs	CAGRTAS	Dummy
Safaricom	111247431	8.04359	46065262	13802238	0.124	0.4150	17	21011175	35545410	96111175	-0.159	1.253	0.000
Sasini Tea	8899533	6.94870	2552796	388937	0.044	0.2870	62	1183363	563344	2548522	0.248	1.081	0.000
Coop. Bank	173026400	8.22499	113478600	5949200	0.034	0.6558	49	131819600	144111400	19473200	-0.821	1.724	0.000
KCB	305094156	8.47112	261428586	136487684	0.447	0.8569	118	243584700	251145838	33983768	-0.307	1.538	0.000
Rea vipingo	2116778	6.31301	666493	294834	0.139	0.3149	19	784321	313029	2014022	0.219	1.631	0.000
Mumias	23606094	7.36098	10280444	8807599	0.373	0.4355	59	6701109	4441437	15033756	0.149	1.721	0.000
EABL	47247287	7.66543	24272255	8850908	0.187	0.5137	92	17255783	17143300	46513198	0.028	1.475	1.000
Standard Bank	164607834	8.20954	143999946	8592920	0.052	0.8748	103	155144098	136021349	14131536	1.387	1.431	0.000
NMG	8294420	6.90941	2732080	1780880	0.215	0.3294	55	5960000	2637300	10951720	0.297	1.783	0.000
BAT	12967653	7.10849	6926140	2574075	0.198	0.5341	112	6074545	5091017	26758256	0.033	1.247	1.000
Kengen	154396442	8.18173	82478024	3102051	0.020	0.5342	60	22510617	21915547	14352223	0.035	1.457	0.000
BOC	1760402	6.23128	459498	154135	0.088	0.2610	128	1872287	440681	1257270	1.147	0.839	0.000
Express Kenya	862135	5.88550	614364	-42067	-0.049	0.7126	96	162546	351446	547504	-0.251	0.552	0.000
CMC Holdings	13722271	7.13679	8180519	200347	0.015	0.5961	66	11405063	7221190	11813019	0.359	0.998	0.000
EA Cables	4832118	6.67699	2626969	331115	0.069	0.5436	48	2369285	5629775	4038293	-0.630	1.375	0.000
Athiriver Mining	21099317	7.30267	15074965	1114676	0.053	0.7145	40	5695401	4939469	8402708	0.078	2.035	0.000
Kenya airways	85617400	7.92389	101812600	-942800	-0.011	1.1892	37	22326400	66922200	87033000	-0.603	2.815	0.000
Total Kenya	31699685	7.49991	16876172	487498	0.015	0.5324	55	23207078	18166340	100104736	0.047	1.180	0.000
Centum activities	11496820	7.03077	2087036	1479624	0.129	0.1815	32	1321185	891197	1824641	0.023	3.676	0.000
Equity	192204600	8.25627	156431000	9409800	0.049	1.2400	30	184995854	164821908	15293400	1.081	2.035	0.000