

TESTING FOR THE EXISTENCE OF NOISE IN FINANCIAL STATEMENT BASED MEASURES OF PERFORMANCE FOR COMPANIES LISTED AT THE NAIROBI STOCK EXCHANGE.

By

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Declaration

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Dedication

I dedicate this paper to my husband Richard and daughters Lisa and Tyna.

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My sincere gratitude to my supervisor, Moses Anyangu for his tireless and dedicated guidance to the completion of this paper.

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List of Abbreviations

AICPA:	American Institute of Certified Public Accountant
NSE:	Nairobi Stock Exchange
ICPAK:	Institute of Certified Public Accountants
FiRe:	Financial Reporting
GAAP:	Generally Accepted Accounting Principles
EPS:	Earnings per Share
ROA:	Return on Assets
ROE:	Return on Equity
IFRS:	Financial Reporting Standards (IFRS)
CMA:	Capital Market Authority
UNCTAD:	United Nations Conference on Trade and Development
SPSS:	Statistical Package for the Social Sciences
ANOVA:	Analysis of Variance

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Abstract

In Kenya, firms listed at the Nairobi Stock Exchange are required to publish their annual results to keep shareholders informed on their performance. The firms performance is also captured through trading at the Nairobi Stock Exchange where firms perceived performance is indicated on the share prices, among other factors, which results from the forces of demand and supply for the stock. Financial statement and financial market forms of reporting for listed firms is anticipated to have a positive correlation. Whereas market based variables reflect future expectations of earnings, accounting data reflect past performance. Positive correlation is expected on the variables

Efficient markets assume that security prices at any time reflect all available information on a company. This means that the information contained in financial statements is already incorporated in the stock prices hence no room for abnormal returns.

This study tested the existence of noise in financial statement based reporting for firms listed at the Nairobi Stock Exchange. It sought to test the reporting efficiency of these listed firms, given the efficiency levels that stem from numerous independent market operators to obtain an efficient market performance indicator. The study used a sample of 20 firms out of a total of 52 listed firms as at 30th December 2006. The study period was years 2001 to 2005.

Market Return, computed from beginning and end of year share prices adjusted for annual dividend was gauged independently against Return on Assets, Return on Equity and Earnings Per Share.

A positive correlation was found to exist between Market Return and all the other three financial statement based variables. The relationship between Market Return and Return on Assets was found to be more significant than with Return on Equity and Earnings Per Share. This relationship signifies a good level of performance reporting for firms listed at the NSE. The financial statement based reporting is in tandem, to a large extent with market based performance reporting.

CHAPTER ONE

1. INTRODUCTION

1.1 Background

Source of information on performance for listed firms is normally two-fold; financial statement based (accounting measures) and market based measures. Generally, market based variables reflect future expectations of earnings whereas accounting data reflect past performance. The change in a firm's market prices is a response to a wide set of information that reflect revision to the capital market's expectation in relation to future cash flows. In comparison, accounting variables express the relationship between two or more financial figures in the form of percentages or fractions. Odhiambo (2005) contends that accounting variables have only a limited ability to reflect revision of the capital market's expectation in relation to future cash flows. This is because objectivity, verifiability and other conventions that underlie Generally Accepted Accounting Principles (GAAP) limit the ability of accounting earnings to reflect the market's revision of expectations for future net cash flows.

Recent studies have put in question the value-relevance of accounting information to providers of capital. Although the brunt of the assault has focused mostly on the relevance to providers of equity capital with a vast body of literature finding temporal declines in the power of accounting data to explain equity prices (e.g. Lev and Zarawin, 1999; Francis and Schipper, 1999; relevance to the credit markets has not remained unscathed. In particular, the class of models using accounting variables in the modeling of default (notably, Altman, 1968; Ohlson, 1980) have been challenged by two new classes of models, so-called structural and reduced-form, that rely exclusively on market data. On one hand, structural models (Merton, 1974) use option pricing methods to compute a probability of default from the level and volatility of market value of assets. On the other hand, reduced-form models (Jarrow and Turnbull, 1995; Duffie and Singleton, 1999) explicitly define debt value as a function of the default intensity allowing the latter to be extracted from calibration using bond prices. Market-based approaches to pricing distress have been embraced by academics and the public at large.

Despite the popularity of market-based default metrics, anecdotal evidence suggests that accounting information has a potentially important role to play in predicting distress. For example, the case of Enron is indicative of the possible pitfalls of relying exclusively on market information. Moreover, regardless of the quality of market based information, many companies are privately held and thus by necessity accounting information must be used to estimate the probability of default on their (sometimes public) debt. Estimating the relevance of accounting information in the pricing of default risk is therefore an important exercise in its own right.

Accounting numbers have lost value relevance. This phenomenon is frequently attributed to the incomplete recording of intangible value drivers in financial statements. Standard setters' reluctance to change capitalization rules for intangible assets is, however, well founded on economic grounds.

Accounting rules, so the well-known complaint, have ignored in many respects the dramatic changes of economic environments and remain at an inferior stage of development. The complaint is supplied by numerous empirical studies which (i) indicate that the book to market ratios have declined dramatically during the last years and thus, the balance sheet equity numbers are failing more and more to represent the real value of a company, and which (ii) indicate that accounting numbers and particularly earnings figures have lost 'value relevance', i.e. predictive power for the explanation of abnormal returns.

1.1.1 Financial reporting for companies

Companies utilise a wide variety of media to disseminate information to the investment community such as in-person briefing, interim publications and the Internet. However, financial reports have historically been the primary vehicle by which public companies communicate with shareholders, customers and a host of other stakeholders. PriceWaterHouse annual report (1999) cited that the financial report supplements historical financial detail with information about a company's strategy, its management, current position and future prospects, it is not surprising that it should be relied on so heavily by investors and analysts to assess value.

A firm's communication to outside interest groups, especially to the capital markets, represents an essential part of financial accounting. The response of actors in the marketplace to interim and annual accounting earnings announcements has interested both practitioners and academics for decades. The major issue has been the information value of these disclosures. Announcements are said to contain information if they alter investors' beliefs about the value of an asset (Beaver 1968:117). In the course of the years since then, researchers have become convinced that the releases are associated with both increased security price variability and increased trading volume. Ball and Brown (1968) were the first to report drift in stock returns after earnings announcements and Beaver (1968) reported increase in volume following announcements.

Disclosure requirements set out the rules and guidelines governing listed companies to enhance information dissemination to the shareholders. According to Gray et al (1995), Ndubizu (1992), Healy and Palepu (2000), disclosure reduces information asymmetry in the market and thus uncertainty that, in turn, prevents market failure and increases market liquidity. Increasing the level of disclosure increases the level of transparency between the firm and outside investors, reduces the problem of agency cost, and consequently improves the valuation of the firm's stock price. Issuers of publicly traded securities have an obligation to disclose decisions and other circumstances which have a material impact on the value of the securities. This information must be disclosed without undue delay. The disclosure requirements are designed to ensure that investors have equal and simultaneous access to information. The information must therefore be reliable, comprehensive, timely, accurate, comparable and transparent. The objective is to provide investors with material and adequate information as the basis for an informed assessment of the value of the securities and the issuer.

Providing sufficient and high-quality information to investors has been the main concern of all national and international accounting organizations. This is to ensure an optimal allocation of investment resources in the capital market, where existence of information asymmetry creates the problem of mismatching resources to business investment opportunities. In the Kenyan system, companies list at the Nairobi Stock Exchange. All those listed are required to publish their accounts annually as well as provide financial disclosures to the shareholders

A growing body of evidence indicates that companies that fall short of shareholder expectation with regard to disclosure risk an erosion of confidence that can, in turn, do damage to market capitalisation, credit, and liquidity. But along with negative pressures, there are also positive reasons for going transparent. The company's non-financial assets such as brands, market share, customer retention levels, and intellectual capital are of intense interest to investors. Companies that report more comprehensively on these important non-financial assets can often improve their valuation in the capital markets.

1.1.2. Users of financial information

These statements are used by management, labour leaders, investors, creditors and government regulatory agencies, primarily. Financial statements may be drawn up for private individuals, non-profit organizations, retailers, wholesalers, manufacturers and service industries. The nature of the enterprise involved dramatically affects the kind of data available in the financial statements. The purpose of the user dramatically affects the data he or she will seek.

Government officials are generally concerned that reporting and valuation regulations have been complied with and that taxable income is fairly represented. Labor leaders pay particular attention to sources of increased wages and the strength and adequacy of pension plans. Owners, shareholders and potential investors tend to be most interested in profitability. Many investors look for a high payout ratio (cash dividend/net income). Speculators pay more attention to stock value, as growth companies tend to have a low payout ratio because they reinvest their earnings.

1.1.3 The Financial Stock Market

The stock market is a good source of information and it helps firm and firm owners to achieve an appropriate debt equity ratio. In order to reflect a true financial performance of an enterprise, it is important that all firms generate objective financial statements that reflect the true financial statement as at particular financial period. This is particularly important for listed firms in which various shareholders invest on the basis of information availed to them to aid decision-making.

Efficient markets assume that security prices at any time reflect all available information on a company. This means that the information contained in financial statements is already incorporated in the stock prices hence no room for abnormal returns. The Nairobi Stock Exchange deals with the exchange of securities issued by publicly quoted companies and the government. The major role of the stock exchange is that it provides a mechanism where savers can safely invest their money and in addition earn a return, and thus is an incentive to people to consume less and save more. Listed companies in Kenya face dual or multiple reporting requirements in International Financial Reporting Standards (IFRS), Capital Market Authority (CMA) and the Nairobi Stock Exchange (NSE).

1.1.4 Financial Market Efficiency

Primarily, the term efficiency is used to describe a market in which relevant information is impounded into the price of financial assets. The concept of market efficiency had been anticipated at the beginning of the century in the dissertation submitted by Bachelier (1900) to the Sorbonne for his PhD in mathematics. In his opening paragraph, Bachelier recognises that "past, present and even discounted future events are reflected in market price, but often show no apparent relation to price changes". This recognition of the informational efficiency of the market leads Bachelier to continue, in his opening paragraphs that "if the market, in effect, does not predict its fluctuations, it does assess them as being more or less likely, and this likelihood can be evaluated mathematically". This gives rise to a brilliant analysis that anticipates not only Albert Einstein's subsequent derivation of the Einstein-Wiener process of Brownian motion, but also many of the analytical results that were rediscovered by finance academics in the second half of the century.

The efficient markets hypothesis is simple in principle, but remains elusive. Evolving from an initially puzzling set of observations about the random character of security prices, it became the dominant paradigm in finance during the 1970s. During its heyday, the efficient markets hypothesis came to be supported by a growing body of empirical research demonstrating the difficulty of beating the market, whether by analysing publicly available information or by employing professional investment advisors.

Cowles (1933) found that there was no discernable evidence of any ability to outguess the market. Subsequently, Cowles (1944) provided corroborative results for a large number of forecasts over a much longer sample period. By the 1940s, there was therefore scattered evidence in favour of the weak and strong form efficiency of the market, though these terms were not yet in use.

The strong form suggests that securities prices reflect all available information, even private information. Seyhun (1986, 1998) provides sufficient evidence that insiders profit from trading on information not already incorporated into prices. Hence the strong form does not hold in a world with an uneven playing field. The semi-strong form of FMI asserts that security prices reflect all publicly available information. There are no undervalued or overvalued securities and thus, trading rules are incapable of producing superior returns. When new information is released, it is fully incorporated into the price rather speedily. The availability of intraday data enabled tests which offer evidence of public information impacting stock prices within minutes (Patell and Wolfson, 1984, Gosnell, Keown and Pinkerton, 1996).

Because all information is contained in stock prices it is impossible to beat the market over time without taking on excess risk. If capital markets are sufficiently competitive, then simple microeconomics indicates that investors cannot expect to achieve superior profits from their investment strategies.

Competition between rational investors keeps prices about where they should be. As all information that determines stock prices are analyzed by numbers of investors, stock quotes reflect the best estimates of their value. Prices may not always be right, but they are unbiased. So if they're wrong, they're just as likely to be too high as too low compared to a kind of optimal value. Because the market is efficient, investors should expect only a fair return relative to the risk of purchasing a particular stock. Leif Ericsson (2000)

Jama (1997) takes issue with the view that apparent anomalies require new behaviourally based theories of the stock market. Rather, they are indicative of a need to continue the search for better models of asset pricing.

The last two decades have witnessed an onslaught against the efficient markets hypothesis. Yet as Roll (1994) observes, it is remarkably hard to profit from even the

most extreme violations of market efficiency. Stock market anomalies are only too often chance events that do not persist into the future. The importance of the efficient markets hypothesis is demonstrated by the fact that apparently profitable investment opportunities are still referred to as "anomalies". The efficient markets model continues to provide a framework that is widely used by financial economists.

1.1.5 Behavioral Finance

Behavioral finance is a field that has evolved and attempts to better understand and explain how emotions and cognitive errors influence investors and the decision-making process. Many researchers believe that the study of psychology and other social sciences can shed considerable light on the efficiency of financial markets as well as explain many stock market anomalies, market bubbles, and crashes. As an example, some believe that the outperformance of value investing results from investor's irrational overconfidence in exciting growth companies and from the fact that investors generate pleasure and pride from owning growth stocks. Many researchers believe that these human flaws are consistent, predictable, and can be exploited for profit.

Recently investors' buying, holding, and selling decisions have also been considered using behavioral models as a result of a substantial number of observations of apparent anomalies (from the standpoint of the efficient markets' hypothesis) in the financial markets. These anomalies suggest that the underlying principles of rational behavior underlying the efficient markets hypothesis are not entirely correct and that it is also necessary to consider other models of human behavior, such as in the other social sciences. One of the most controversial issues among researchers has been whether investors overreact, and thus behave irrationally, to new information, a subject spurred by De Bondt and Thaler's (1985). These behavioral models may also make it easier to understand the extraordinary degree of trading activity. Shiller (1997) connects the origins of differences of opinion among investors to excessive confidence about investors' own judgements. This may produce, for example, as suggested by Tversky and Kahneman (1974), a tendency for people to see patterns in data that are purely random. Suggestions may also affect investors' assessments, producing a so-called anchoring effect. Overconfidence connected to anchoring may be one source of the high volume of

trading among investors. This is widely evident at the NSF in the recent Initial Public Offers (IPO's) of various firms, in which many investors' overconfidence of making huge returns caused them to invest in firms regardless of the underlying fundamentals. This may suggest abnormality in firms financial market reporting in such instances, however the market forces always counter these discrepancies in the medium term by self correction, leaving the stock market prices on a normal average. When taken over a long time, market based reporting is a good measure of a firms performance.

1.1.6 Noise in Financial Statements

Financial noise is the effect of complex and extensive accounting rules that regulate financial statement reporting and are thought to distort a company's true operating performance. Accounting noise can be seen as either a consequence of necessary rules regarding generally accepted principles or a result of management's attempt to massage the numbers to present a rosier financial picture of the firm.

In spite of the high levels of noise, financial data are among the best application domains for intelligent processing and advanced learning techniques. These data have been recorded very accurately for very long periods of time. They are available on different time scales and are simultaneously available in many different markets. This provides a very rich environment for analysis and experimentation using advanced processing techniques. Moreover, the payoff for even small, but consistent, improvements in performance is huge. Magdon-Ismail et al. (1998)

In addition to being a nuisance that complicates the processing of financial data, noise plays a role as a tradable commodity in its own right. Indeed, market volatility is the basis for a number of financial instruments, such as options, whose price explicitly depends on the level of volatility in the underlying market. For this reason, it is of economic value to be able to predict the changes in the noise level in financial time series as these changes are reflected in the price changes in tradable instruments. Magdon-Ismail et al. (1998)

1.2. Statement of the problem

In efficient capital markets, as defined by Iama (1965), prices reflect all available information promptly and correctly, including the information comprised in financial reports. However, as both theoretical (e.g., Grossman (1976), Grossman and Stiglitz (1976, 1980), and Diamond and Verrecchia (1991)) and empirical (e.g., Ou and Penman (1989) studies have shown, financial statements may not fully reflect all the information pertaining to its performance at a particular period. These may be reflected in lack of relation between financial statements and market performance of individual firms

Despite the expectation that earnings response coefficient for companies can be regarded as reliable predictor of individual company's future returns, Jindrichovska (2001) found an empirical evidence to suggest that a relationship exists in the response coefficients of returns and annual earnings on the emerging Czech market. It was, albeit, rather unstable and vague and not statistically significant for a period of one year and longer. The increase in the main response coefficient reported in the study suggested sensitivity of returns to annual earnings changes. It could not be inferred with a degree of confidence that the Czech capital market views earnings changes to be largely permanent.

Salmi et. Al (1997) find that there exists a general association between the firm's accounting ratios and its stock return and risk. When taken alone, both the accrual-based and the cash-based variables are significantly associated with the market-based variables. However, due to various management and accounting issues, financial reporting in some firms is distorted and does not reflect the actual performance, leading to wrong or distorted decision-making based on the reported output. The difference that may exist between the performance of a firm as provided by the companies in the annual financial statements and the quoted market performance can be described as noise in the financial statements.

It is important that a firm's reported performance fits well with the actual performance. Increased transparency and higher-quality reporting enhance credibility and allow investors, analysts and other consumers of company information to better understand long-term strategy. However, most financial measures focus on short-term accountabilities and leave out intangible factors that directly affect the customer, supplier

and employee. The same financial results lead to situations that are narrow in focus and set up adversarial environments based on irrelevant data. Financial measures can be manipulated to meet the outcomes desired by the party reporting them.

Coleman and Eccles, (1999) argue that current financial reporting is unduly focused on historical performance. There is a substantial scope for companies to improve the way in which they report their financial performance. Ideally, companies should provide the market with future-oriented information on current anticipated performance over a range of financial and non-financial variables. Research shows that this information will help investors gain insights into the quantum and quality of shareholder value being created. Factors captured in the financial statements do not always capture all the issues that are relevant for shareholder decision-making.

This study will test the existence of noise in the financial statement based measures of performance of publicly listed companies in Kenya.

1.3. Objectives of the study

The objective of the study is to determine the existence of noise in the financial statement based measures of performance for firms listed at the Nairobi Stock Exchange.

1.4. Importance of the study

The findings of the study are to:

- a) Provide a better understanding of noise in the financial statement-based measures of performance for firms listed at the NSE if any.
- b) Enable CMA, NSF and other financial market participants assess the efficacy of financial market operations in Kenya.
- c) Provide a body of knowledge to the academic community.

CHAPTER TWO

2. LITERATURE REVIEW

With the advent of the Sarbanes-Oxley Act, corporate business activities and the reporting of them have become more transparent than ever before.

After decades of increasingly complex reporting requirements, disclosures have become difficult for even the most sophisticated users to understand. Multiple reporting jurisdictions have created redundant disclosure requirements and reporting processes have become inefficient and error-prone.

Listed companies have various disclosure requirements in order to keep their shareholders well informed of the operations of the firms at any particular time. Good quality financial information must possess attributes that validate its use by the various stakeholders that employ it for various functions.

Lych (2001) describes various desirable qualitative characteristics of financial information. These are discussed below;

2.1 Qualitative characteristics of financial information

Qualitative characteristics are the characteristics that make the information provided in the financial statements useful to users for assessing the financial position, performance and financial adaptability of an enterprise.

a) Relevance

Relevant information has the ability to influence the economic decisions of users and is provided in time to influence those decisions

Information that is relevant has predictive value or confirmatory value. It has predictive value if it enables users to assess past, present or future events. It will have confirmatory value if it helps users confirm or correct their past evaluations and assessments. Information may have both predictive and confirmatory value.

b) Reliability

Information is reliable when it can be depended upon by users to represent faithfully what it purports to represent or could reasonably be expected to represent. It is necessary that the information is accounted for and presented in accordance with their substance and economic reality and not merely their legal form.

c) Comparability

Users must be able to compare the financial statement of an entity over time to identify trends in its financial position and performance. Users must also be able to compare the financial statements of different entities to evaluate their relative financial position, performance and financial adaptability. Consistency and disclosure are therefore required.

d) Understandability

Arthur Harris (1979), confers that the degree to which accounting messages contained in financial reports are understood and convey the exact meanings which were intended by their senders seem a natural issue of interest. A fundamental issue is whether the expression of agreement or disagreement with an intended message by sender or receiver does, in fact, lead to distortions in the intended decisions the messages were intended to induce.

e) Materiality

According to the FASB statement of Financial Accounting Concepts No.2, "The omission or misstatement of an item in a financial report is material if, in the light of surrounding circumstances, the magnitude of the item is such that it is probable that the judgement of a reasonable person relying on the report would have been changed or influenced by the inclusion or correction of the items".

T.E. McKee and Eilifsen.A (2000) state that sound materiality judgments are an important element of maintaining investor confidence in the public reporting system currently used by capital markets. Vorhies J.B, (2005) illustrates that materiality is not a simple calculation. Rather it is a determination of what will vs. what will not affect the decision of a knowledgeable investor given a specific set of circumstances related to the

fair presentation of a company's financial statements and disclosures concerning existing or future debt and equity instruments.

f) Timeliness

Financial information which is relevant and reliable and which passes the materiality test may lose its relevance if there is undue delay in it being reported. Thus, the time available to gather and report financial information is a constraint on providing relevant information.

2.2 Limitations of financial reports as traditionally constructed

Lych (2001) describes the limitations of financial statements as traditionally constructed. These are discussed below;

2.2.1 Allocation into different periods.

Financial reports involve a substantial degree of classification and aggregation and the allocation of the effects of continuous operations to discrete reporting periods. This requirement creates discontinuity and overlaps in continuous processes when some parts of job processes are reported in one period and the balance in another.

Information presented to the user is of necessity summarised in some form. The summarisation process may have the effect of distorting the nature of some of the information. For example creditors will be classified into those payable within one year and those payable beyond one year. Two loans that have two days difference in their payment date may well as a consequence be classified under different headings. The user, unless he is provided with further information, will tend to take the two resultant totals at face value.

Revenue and costs are also inequitably distributed between periods, this causes imbalanced reporting for projects that go beyond one reporting period due to overstatement in one period and understatement in another.

2.2.2 Historically based

Financial reports provide information that is largely historical. They do not reflect future events or transactions, nor do they anticipate the impact of changes in the economic or

potential environment. They are not always useful in the forward planning process of a business especially in changed operational circumstances.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Financial reports tend to be historically directed, therefore projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Historical reporting may also overstate profits when prices are rising through inflation since as inflation pushes prices up, the true value to the business on the use of the asset becomes progressively more than the depreciation charge

2.2.3 Lack of non-financial outlook

Financial reports are usually based on conventionalised representation of transactions and focus on financial effects of transactions and do not focus to any significant extent on their non-financial effects or on non-financial information in general. Various studies have proved that non-financial aspects of a business contribute very largely to the performance of any existing business enterprise, making it compulsory for any well performing institution to pay special attention to it. Financial reports do not have special focus on non-financial issues.

2.2.4 Extra information requirement

Often, financial statements require accompanying financial information and supplementary special reports. These entail a lot of time and manpower as well as specialised skills to prepare to required standards. Money is also spent on the preparation of the reports. All these additional requirements minimise the convenience of preparation of the financial reports.

2.2.5 Lack of information on Board and Management

Largely, there is scepticism about the utility of financial reports. For example, where shareholders are to vote on issues as board elections, financial information is less relevant than information on individual members, composition, structure and functioning of the

board Financial reports do not provide for the most necessary information, therefore, do not address the main issue at such points.

Financial information determines self-dealing but shareholders also need specific information on management's integrity and loyalty.

2.3 Kenyan companies compliance with accounting standards and financial reporting.

A study of the Kenyan companies by ICPAK, the accountant's body in 2005, noted that a lot of companies do not apply the mandatory standards in preparation of financial statements, some companies even doctor the figures they report. This is supported by findings from the annual Financial Reporting (FiRe) award. "In 2005, six years after implementation of the IFRS (International Standards of Accounting and Reporting) in Kenya, there was no single company that exhibited 100 per cent compliance with IFRS out of a total of 84 that submitted their financial statements for review, 45 of these are listed at the Nairobi Stock Exchange" says the report released towards the end of 2006. This is dangerous for investors who rely on financial statements to make investment decisions, especially on companies listed at the Nairobi Stock Exchange.

The table below indicates the compliance levels attained by several firms that participated in the 2005 FiRe awards.

Table 1: Firm compliance levels

IFRS: COMPLIANCE RECOGNIZED IN THE 2005 FIRE AWARDS					
Compliance levels achieved	Insurance sector	Banking sector	All other companies	Total No.	In per cent
Above 80 per cent	3	0	10	13	16
60 to 79 per cent	12	10	15	37	44
50 to 59 per cent	7	1	3	11	13
Below 50 per cent	3	15	5	23	27
Total No.	25	26	33	84	100

Source: Based on data compiled by the Institute of Certified Public Accountants of Kenya for FiRe awards

According to ICPAK, areas of significant non-compliance include presenting profit from associated companies as part of income in the additional notes and failure to disclose compensation for key managers as well as non-disclosure on defined benefit plans. This denies an investor the benefit of a comparative analysis.

Others include companies' failure to disclose information relevant to assess interest rate risk and credit risk, hiding movements in insurance assets and liabilities and presenting proposed dividends as a liability and offsetting liabilities from assets. The last three distort balance sheet information.

It is noteworthy that even in the case of full compliance, financial statements may not capture all aspects captured by the market.

2.4 Empirical Literature

Timo et al (1997) concluded that there exists a general association between a firm's accounting ratios and its stock return and risk. In their study, the nature of the association between the firm's accounting and market-based variables was investigated using canonical correlation analysis. They found a significant association between accrual-based accounting variables and market based variables in the USA. However, the accounting variables making up the relationship varied along time. The decomposed analysis of the association suggested that when taken alone, both the accrual based and cash based variables are significantly associated with market-based variables and that the accrual-based variable set has a stronger relationship with the market-based set than the cash-based set.

Jindrichovska (2001) investigated the nature of the relationship between accounting earnings and returns on the Czech market. It was conducted using a data sample covering the years 1993-1998. The results of firm-specific and pooled regression models suggested that for a short estimation window of up to three quarters, there is statistically significant relationship between studies on earnings to price ratios and price relatives. However, the coefficients estimated from pooled regression did not behave as expected. The one-quarter coefficient was by far the biggest, whereas the following two quarters were much smaller. In the case of firm-specific estimates, the differences were much smaller but the general pattern of non-monotonic remained the same. The earnings response coefficient for individual companies could not be regarded, as a reliable predictor of individual companies' future earnings, but it was significant for the sample as a whole.

One of the limitations of this study was that during the period under review (1993-1998), prices on the Prague stock exchange was mostly falling. That trend may have influenced

the earnings/return relation, which had been central to the analysis. Such a trend was unlikely to persist and, when a similar analysis was repeated later (and on a market which by then may be consolidated and hence more tractable), one could expect to find that more pronounced and stable results were obtained. Another limitation was that, the analysis was performed on a relatively short time series, and due to that the sample size decreased as the lag between observed price response coefficients increased.

Rosenberg, Reid and Lanstein (1985) found out that the average return on US stocks are positively related to the ratio of a firm's book value to the market value. Their study examined the proposition that stocks with low price book value should outperform high price book value stocks and found out that those stocks with low price book value ratios experienced significantly higher risk adjusted rates of return than the average stock

Harris and Marston (1993) showed that the price book value ratio is positively impacted by future growth prospects and risk factors similar to the price earnings ratio.

Fairfield (1994) examined the characteristics and usefulness of the price book value ratio by using accounting information to show that the price book value ratio is a function of the expected level of profitability on book value, which is known to be related to return on equity. Fairfield's valuation model illustrates in accounting terms that the price book value ratio depends on the expected changes in future profitability

Jones (2003) suggested that risk is an important factor in the setting of market prices. As risk increases, a firm's value declines so that risk averse investors are rewarded for taking on additional risk with a greater return on their investment. The study used the Residual Income Valuation model (RIM) to demonstrate empirically that as the riskiness of a firm's earnings increases, its market value declined. The RIM had been used by accounting researchers in the USA to study firm value because it was consistent with well accepted theories in finance and its primary inputs were familiar accounting measures. RIM showed that firm value was equal to the present value of a firm's expected future residual income flow. Empirical implementations of RIM typically expressed stock price as a function of book value earnings and/or earnings forecasts. The study added to the literature by more vigorously incorporating earnings risk into the RIM. The RIM proposed included several indicators of earnings risk: the variability in analyst forecasts,

short term refinancing exposure, geographical diversification, operating leverage and size. The results confirmed that earnings risk was an important component on the market valuation process.

Using a sample of more than twenty thousand firms over the 1983 to 2001 time period, analysts found that the additional earnings risk measures significantly improve RIM's ability to explain market prices. In addition, the evidence showed that each risk measure conveys meaningful information about the pricing process. It was found that variability of earnings expectations, exposure to interest rate fluctuations, geographical diversification, operating leverage, and size, all significantly affect stock prices. The evidence suggested that while operational diversification did not have an overall impact on firm value, it did significantly affect how the market individually priced earnings and earnings forecasts. The study explained how earnings and earnings risk factors created value in the eyes of the investor.

Lawson (2003) claimed that a number of firm characteristics explain the cross section of common stock returns. These characteristics either are functions of stock prices, or are not functions of stock prices and hence depend only on accounting disclosures. Characteristics in the first class reflected and summarized investors' risk opinions while characteristics in the second class contributed to the determination of investors' risk opinions. The study drew a distinction between the two classes in order to characterize the accounting disclosures that determined investors' opinions of risk and to evaluate the importance of accounting disclosures for determining investors' opinions relative to non-accounting information. The results showed that investors' opinions about systematic risk are determined by profitability, firm size and the growth of firm size and that there are strong seasonal patterns in the expected return premia of the accounting determinants of opinions.

The Lawson (2003) study suggested that, although investors opinions depended on non-accounting information, investors opinions are determined primarily by accounting disclosures and that the cross sectional variation that accounting determinants did not explain had implications for risk measurement; its magnitude indicated that accounting

disclosures did not contain sufficient information about investors' opinions to measure the risk of equities with extreme exposure to non-accounting determinants.

Shuehlim (1998) set to find out what could be inferred about the behaviour of publicly listed corporations from the behaviour of their security returns. The focus was on how the degree of co-movement changes through time and on how it was related to observed characteristics of the firms. The evidence strongly suggested that the degree of co-movement associated with a given firm's equity converges, through time, to the market average degree of co-movement.

Giner et al (1997) analyzed the information content of operating cash flow considering the association between expected cash flows and abnormal returns and found out that share prices depend on firm's expected future cash flows and risk.

Davis (2001) examined the claim that the book to market ratio no longer contains any information that can be used to identify value stocks. Book to market ratio is the ratio of a firm's book value of equity to its market value of equity. The study determined book value of equity using historic cost information. Buyers and sellers of the stock using current information determined market value of equity.

Clark (2000), disputed many investors and financial commentators belief that high earnings growth rates and high rates of return are synonymous. What is true he claimed was that the differences in earnings growth rates influence the breakdown of expected rates of return into their capital gain and dividend components and that although equal, a higher rate of earnings growth produces relatively more capital appreciation and less dividend yield. Earnings growth, he concluded does not affect the expected total rates of return.

Gitan (1990) found that companies quoted in the Nairobi Stock Exchange do exhibit a positive relationship between systematic risk and return. This relationship though was not statistically significant thereby suggesting that investors may either be over or under compensated for taking high risk. The results also indicate negative but statistically insignificant relationship.

Sawaya (2000) set out to determine to what extent market risk as measured by relating returns of individual securities to returns of the market is a useful indicator in analyzing risk characteristics of firms quoted at The Nairobi Stock Exchange. He set to find answers to whether the NSE derived beta contains sufficient information and if the relationship between return and risk is linear and positive. The objective was to establish whether beta calculated is not zero and whether there is a relationship between return on security that is linear and positive. He observed that stocks with below average risk have higher returns than those with above average risk and concluded that there is a positive relationship between asset return and beta.

Studies analyzed indicate correlation between various aspects of market based and financial statement based reporting. This study tests this aspect at the Nairobi Stock Exchange for the variables defined in the study.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Research design

This study examined the correlation between various financial aspects: as provided by companies in the annual accounts and other company publications on the one hand and market information available on the companies on the other hand. The correlation coefficient measures the existence and degree to which the movements of two variables are related. Correlation was used to evaluate the relationship between two variables: i.e., how closely they match each other in terms of their individual mathematical change. The question the study addressed is: if one variable (X), representing financial statement measure of a company's comparable performance, moves or changes in a certain direction, does the second comparable variable (Y), representing the same company's market performance, also move or change in a similar or complementary direction?

The direction of the dependent variable's change depends on the sign of the coefficient. If the coefficient is a positive number, then the dependent variable is moving in the same direction as the independent variable; if the coefficient is negative, then the dependent variable moves in the opposite direction of the independent variable.

3.2 Population

The population of the study consisted of companies listed at the Nairobi Stock Exchange. The Nairobi Stock Exchange had a total of fifty-two listed firms as at 31st December 2006. The market is classified into three main market segments: The Main Investment Market Segment, The Alternative Investment Market Segment and The Fixed Income Securities Market Segment.

The details of this classification are in Appendix I.

The use of listed firms for the study was selected for several reasons:

1. All these firms are publicly listed and therefore information on them is available for public information and scrutiny.

- ii The performance of listed companies is captured by annual accounts as well as market-based reports, and this information is available on the listed companies.

The study period was five years between 2001 and 2005, with 2005 being the most recent year. The five-year period was considered adequate to derive conclusive results.

3.3 Sampling

The choice of sampling process to select units from the population was taken as the method gives a fair chance of selection for all items in the population, so that by studying the sample we may fairly generalize our results back to the population from which they were chosen. This ensures a fair representation of the population in the sample selected.

All the firms were split into five strata, from the various market segments. Sampling was used within the strata, to pick on the listed companies to be used for the study. Out of a total of 52 listed companies at the Nairobi Stock Exchange, 20 were selected for the study across all the market segments (strata). Four firms were selected from each market segment. Firms listed in less than the last five years were not incorporated, as the financial market information on them is not adequate to cover the period of study. In market segments that have only four listed companies, all the firms were considered as part of the sample, for example the agricultural market segment. The list of selected firms is attached in Appendix II.

3.4 Data Collection

Secondary data was used- in the study. The sources were NSF and Annual Company reports. Data for the study was collected from annual reports for 5 years, between 2001 and 2005.

The data was collected by use of information tables drawn up by the researcher and filled for all the companies sampled for the study to aid in collection and collating of the data required to draw up conclusive results.

Secondary data was collected from the annual reports of twenty listed companies sampled for the study. Various performance indicators were collected for analysis of the

performance of the firms over time in various aspects. These parameters are Profit after tax for each year, Total Assets for each year over a five-year period and Total Equity for each balance sheet date.

Market based data was collected from the NSE handbook, 2005. Stock price at the beginning of the year, end of the year and dividend for the year was collected.

3.5 Data Analysis

Data analysis tools in Microsoft Excel and SPSS were used to analyse the data. The underlying goal was to search for trends in financial statement performance measures of firms in the population of study and make a comparison against the market returns of the same firms.

The analysis tested the directional movement of the variables to test whether the variables moved together and if not, whether the departure is significant.

Various financial ratios were computed over the five-year period of analysis in order to analyse the trend performance of the firms over time. Earnings per share, dividend per share, return on investment, share price at the beginning and end of year, including the dividend paid within the year were collected and analyzed to determine the market return.

Firm performance indicators were used to measure the overall profitability and overall performance of a company. The measures used market-based performance indicators to highlight performance attained at given financial periods. Data analysis was done to establish interrelationships between various indicators. The parameters are outlined below.

a) Share price

A listed company's share price movement is determined by several firm and market factors. The price is assumed to be a reflection of a firm's financial health and performance level. The stability or otherwise of the share price depends on among other things, the activities the firm is involved in and the analysis and future prediction of market operators.

The beginning of year and end of year share price of sampled firms, including the total dividend in an year was obtained from the NSE over a five-year period in order to compute the market return.

b) Earnings per share (EPS)

EPS was obtained by a division of net profit or loss due to shareholders by the weighted average number of ordinary shares outstanding in a period. Weighting was done to incorporate changes in outstanding shares due to new issues or buy backs.

c) Return on Assets (ROA)

ROA was estimated by a division of net income by total assets. A comparison was made against market return to determine correlation of the two variables.

d) Return on Equity (ROE)

ROE was computed by dividing total net income by total equity. This was then compared against market return to determine existence of correlation between the variables as well as the significance of the rate of change.

e) Market Return

This is the measure of investment return as measured by the market also defined as the gain or loss for a security in a particular period, consisting of income plus capital gains relative to investment. This shall be measured by:

$$\frac{P_1 - P_0 + D_1}{P_0}$$

Where P₁ – Share price at the end of year

P₀ – Share price at the beginning of year

D₁ – Total dividend in an year

The return shall assume a single holding period; otherwise we must consider the time value of money.

3.6 Correlation Analysis

Correlation Analysis evaluates the relationship between/among two or more variables. Correlation is used to reveal the magnitude and direction of relationships. Magnitude reveals the degree a variable moves in the same or opposite direction while direction is indicated by whether a variable has a positive or negative relationship.

Correlation Coefficients have been used to indicate the strength and direction of a linear relationship between two variables, the financial statement-based and the market-based variables. Return as measured by the financial statements was compared against market return to determine whether the movement of the variables was in the same direction and if they were correlated.

3.7 Statistical Significance

The T-test was carried out to establish if the differences revealed by the profiles and the gap between the financial statement-based and market-based variables was statistically significant.

Tests of significance were carried out on the variables. Existence or non-existence of noise in financial statement based performance of listed companies in Kenya was determined. Existence of correlation indicated a relationship between the variables. This relationship when positive indicated movement of variables in the same direction. A negative relationship indicated movement of the variables in different directions..

CHAPTER FOUR

4. DATA ANALYSIS AND FINDINGS

4.1 Introduction

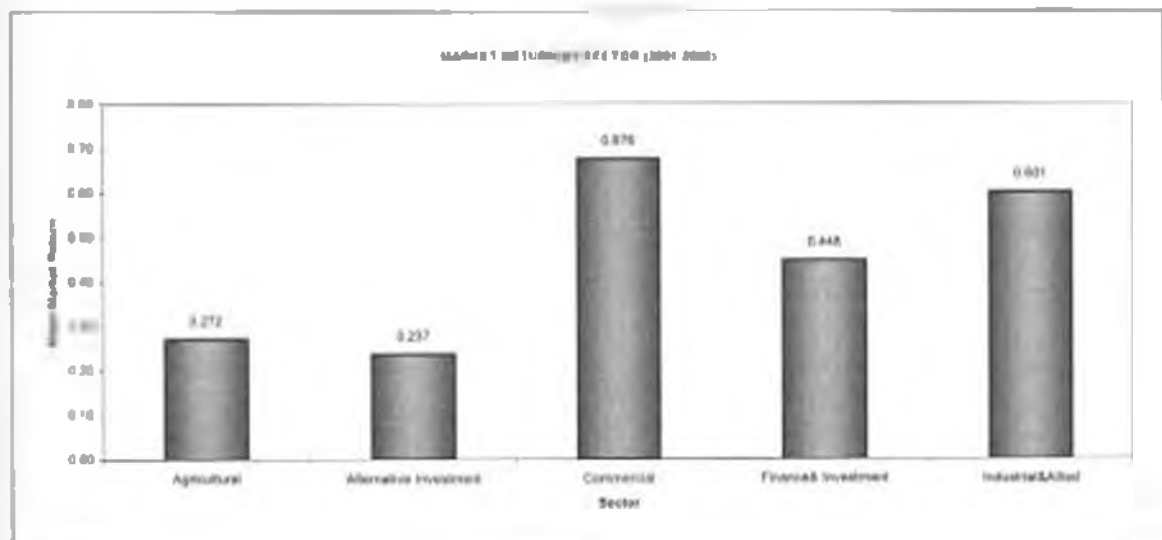
This chapter discusses the findings of the research study. Preliminary analysis of all the variables is discussed in section 4.2. In the next section, a comparison between financial statement based and market based performance is made. The correlation matrix outlines the relationship between Market Return and three other variables, Earnings Per Share, Return on Assets and Return on Equity. Stepwise regression analysis is analyzed to show the variable that best describes Market Return movement.

4.2 Preliminary Analysis

4.2.1 Market Return

According to figure 1 below, the value of market return analyzed by sector shows that over the years. Commercial Sector (0.676) has had the highest mean value of market return followed by Industrial and Allied Sector (0.601) and then by Finance & Investment Sector. Alternative Investment Sector has had the least mean value of Market Return (0.237) while Agricultural Sector had a low Market Return mean value of 0.272.

Figure 1: Mean Market Return by Sector (2001-2005)

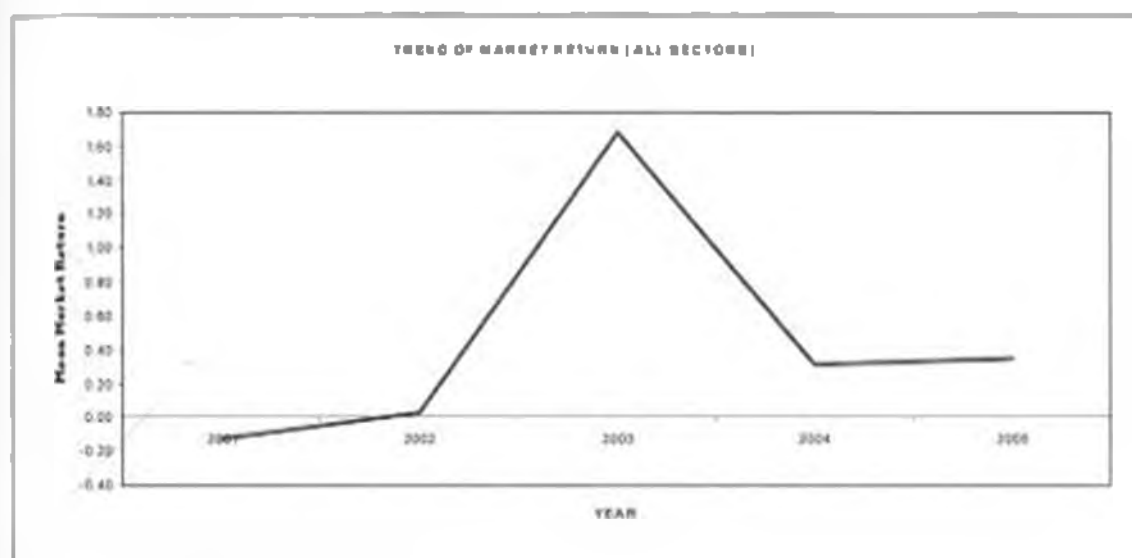


Data sourced from NBI handbook 2005.

In order to establish if there exists a difference in Market Return by Sector, analysis of Variance (ANOVA) was carried out and the results showed no significant difference in the mean Market Return by sector since the p-value=0.664 is much greater than 0.05 at 5% level of significance.

Trend analysis of the mean value of Market Return over the years shows that in 2001 the mean value was negative for all the sectors. It slightly improved to a positive figure in 2002 then had a sharp increase in 2003 and a slight drop in 2004 and 2005.

Figure 2: Trend of Market Return (All sectors)

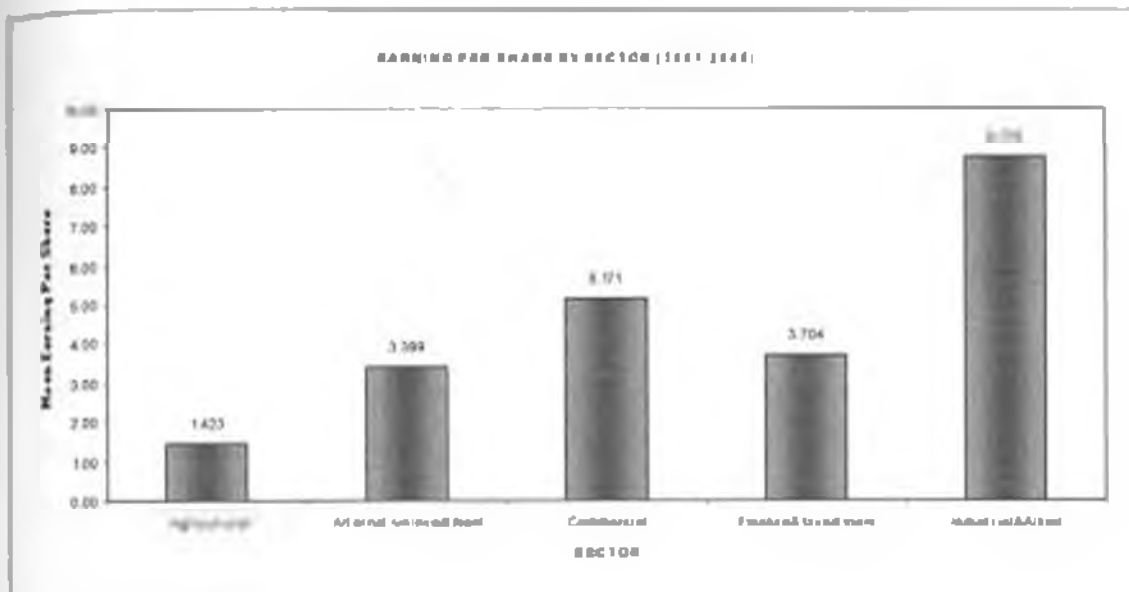


Data sourced from NSE handbook 2005.

4.2.2 Earnings Per Share (EPS)

The mean value of Earnings per share over the years was highest for firms in the Industrial & Allied sector (8.776) followed by firms in the Commercial sector (5.171) and then by firms in the Finance and Investment Sector (3.704). It was lowest for firms in the Agricultural Sector (1.423). See figure 3 below.

Figure 3: Mean Earnings Per Share by Sector (2001-2005)



Data sourced from NSI handbook 2005.

The study also revealed that there existed significant differences in the mean Earnings per Share by sector. Through ANOVA test a p-value of 0.003 was realized which was less than 0.05 at 5% level of significance. Further analysis (Post hoc test) revealed that these difference was between Agricultural Sector and Industrial (p-value=0.002) and between Alternative Investment and Industrial Sector (p-value=0.042).

Figure 4: Trend of Earnings Per Share (All sectors)



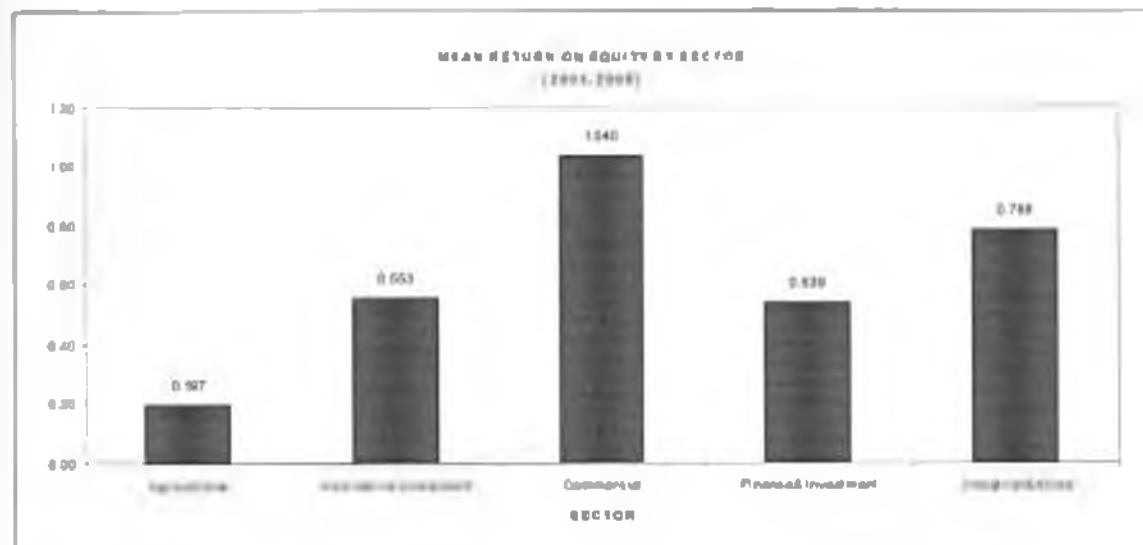
Data sourced from NSI handbook 2005.

4.2.3 Return on Equity (ROE)

Return on Equity is the profit after tax (adjusted for preference dividend) divided by the net worth or the shareholder's equity as at the end of that year/period. It measures the return on shareholders' equity and tells shareholders how much money the company is making for them. No matter what industry the company is in, or what its assets size is, all shareholders would rightfully want to invest in a company, which has a high return on equity.

As shown in figure 4 below, firms in the Commercial and Services had the highest mean Return on Equity (1.040) followed by firms in the Industrial & Allied (0.788) and then by firms in the Alternative Investment (0.553). Firms in the Agricultural Sector had the least mean value (0.197).

Figure 5: Mean Return on Equity by Sector

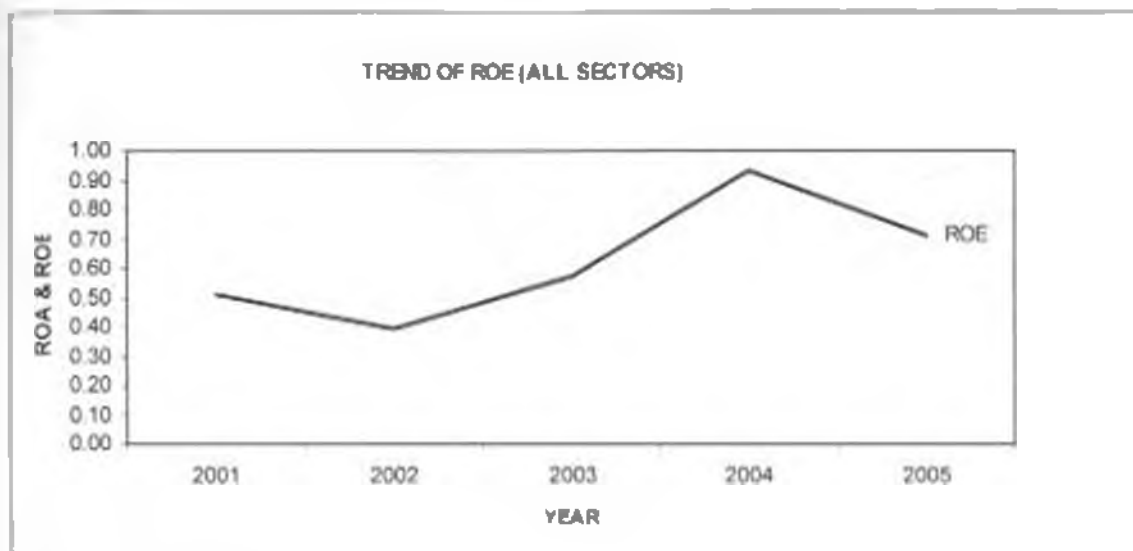


Data sourced from NSI handbook 2005.

Analysis of Variance of differences in Return on Equity by sector revealed a significant difference in the mean Return on Equity by sector (p -value=0.032) at 5% level of significance. Post hoc test revealed that the difference was between Agricultural Sector and Commercial Services Sector (p -value=0.018).

Trend analysis of Return on Equity over the years showed that the mean value of Return on Equity has dropped slightly in 2002 and thereafter has had a gradual increase over the years until 2004. It dropped again slightly in 2005.

Figure 6: Trend of Return on Equity (All Sectors)

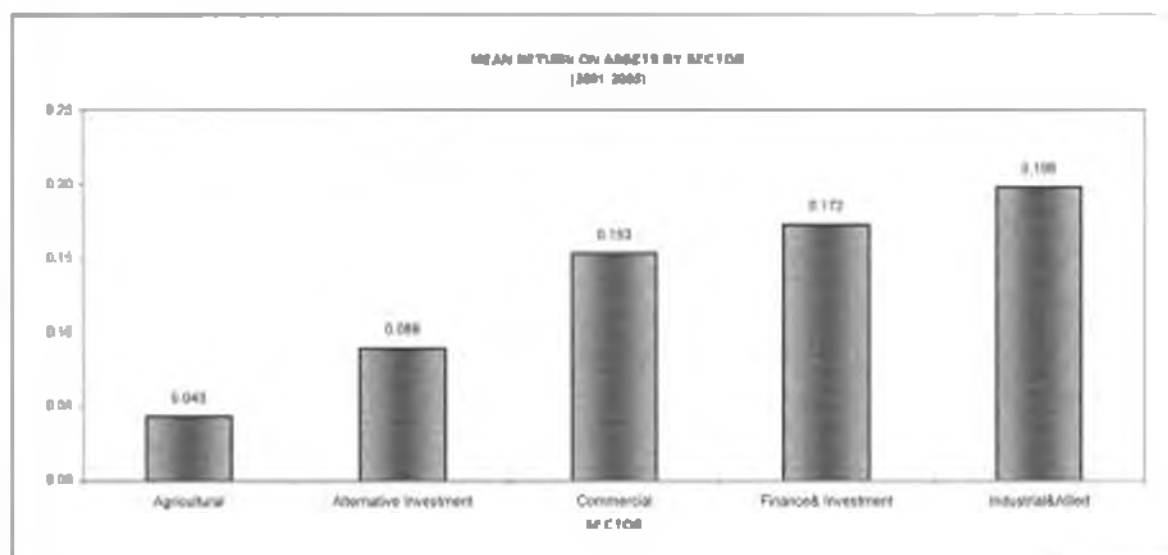


Data sourced from NSE handbook 2005.

4.2.4 Return on Asset (ROA)

The mean value of Return on Assets, according to the results below, was highest for Industrial and Allied (0.198) followed by Finance & Investment (0.172) and then by Commercial Services (0.153). Agricultural Sector had the least mean return on assets at 0.043.

Figure 7: Mean Return on Assets by Sector

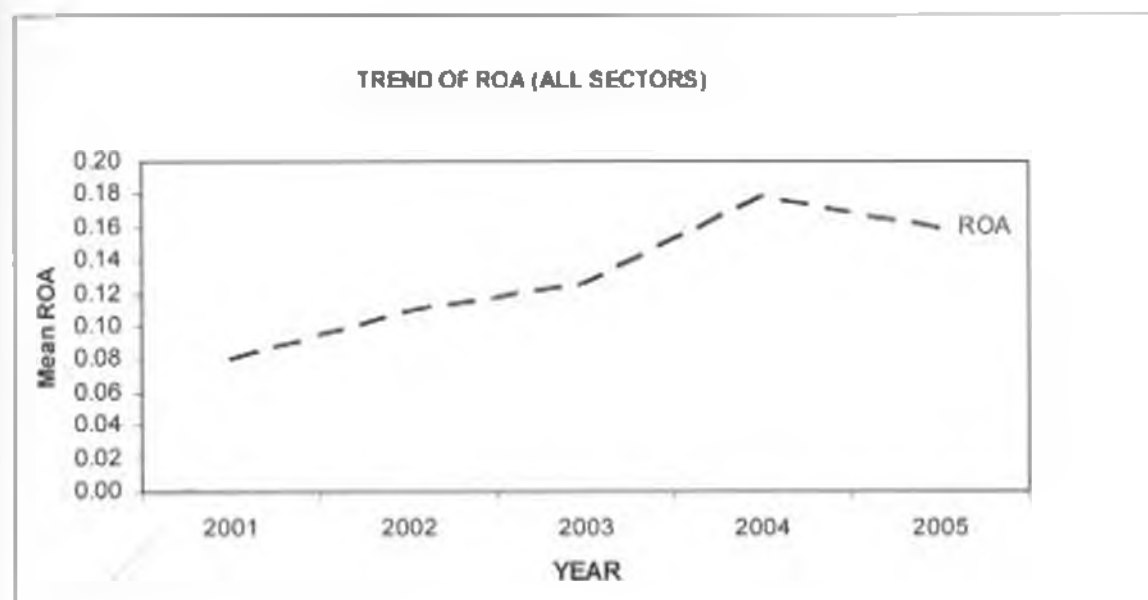


Data sourced from NSE handbook 2005.

The results also revealed a significant difference in the Return on Assets by sector through Analysis of Variance (p-value 0.015) at 5% significance level. This difference was between Agricultural Sector and Industrial Sector (p-value=0.020). (Appendix IV)

Trend analysis of Return on Assets in figure 7 above shows that it has been increasing steadily over the years except for 2005 when it slightly dropped.

Figure 8: Trend of Mean Return on Assets (All Sectors)



Data sourced from NSF handbook 2005.

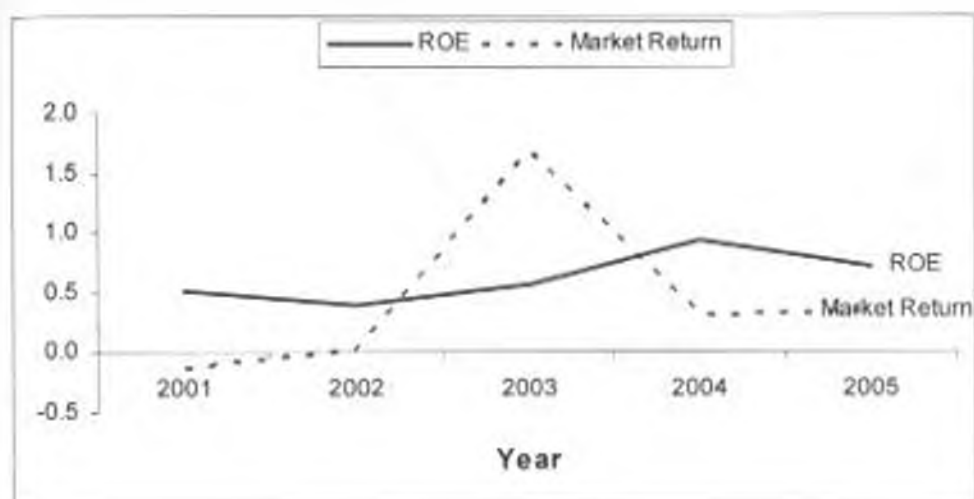
4.3 Relationship between financial statement based measures of performance and market based measures of performance

Table 2: Trend of Market Return and ROE

Sector		ROE	Market Return
Agriculture	Mean	0.197	0.272
	Std. Deviation	1.091	0.626
Alternative Investment	Mean	0.553	0.237
	Std. Deviation	0.937	0.826
Commercial Services	Mean	1.040	0.676
	Std. Deviation	0.703	1.515
Finance & Investment	Mean	0.539	0.448
	Std. Deviation	0.744	0.858
Industrial & Allied	Mean	0.788	0.601
	Std. Deviation	0.681	1.258
Total	Mean	0.624	0.447
	Std. Deviation	0.876	1.060

Data sourced from NSF handbook 2005

Figure 9: Trend of Market Return and ROE



Data sourced from NSE handbook 2005.

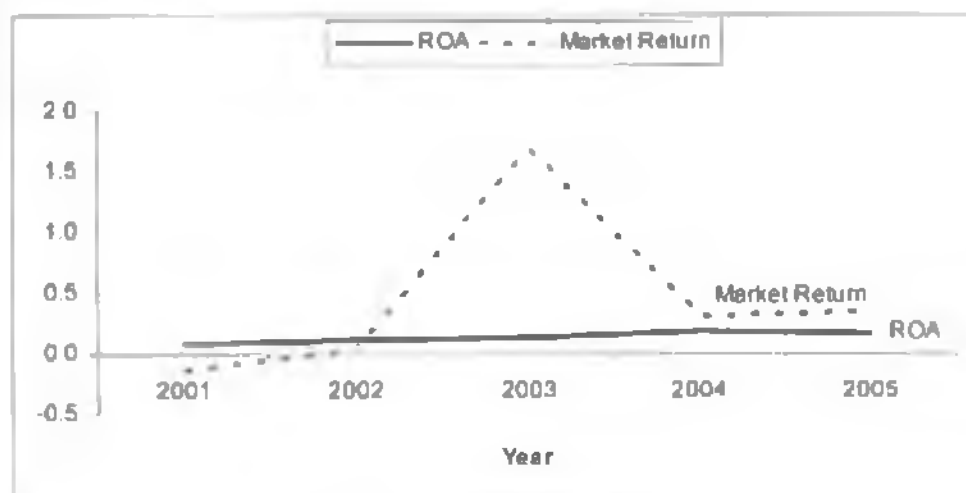
In Figure 9 above, Market return and Return on Equity are positively correlated between 2001 and 2002. Between 2002 and 2003, Market Return accelerates faster than ROE, but still maintains a positive correlation. In 2003, Market Return decelerates at a high rate, while ROE accelerates at a moderate rate. Between 2004 and 2005, the two variables indicate a stable positive correlation as the movement is closely linked.

Table 3: Trend of Market Return and ROA

Sector		ROA	Market Return
Agriculture	Mean	0.043	0.272
	Std. Deviation	0.108	0.626
Alternative Investment	Mean	0.089	0.237
	Std. Deviation	0.130	0.826
Commercial Services	Mean	0.153	0.676
	Std. Deviation	0.110	1.515
Finance & Investment	Mean	0.172	0.448
	Std. Deviation	0.229	0.858
Industrial & Allied	Mean	0.198	0.601
	Std. Deviation	0.173	1.258
Total	Mean	0.131	0.447
	Std. Deviation	0.164	1.060

Data sourced from NSE handbook 2005.

Figure 10: Trend of Market Return and ROA



Data sourced from NSE handbook 2005.

4.3.2 Trend of Market Return and ROA

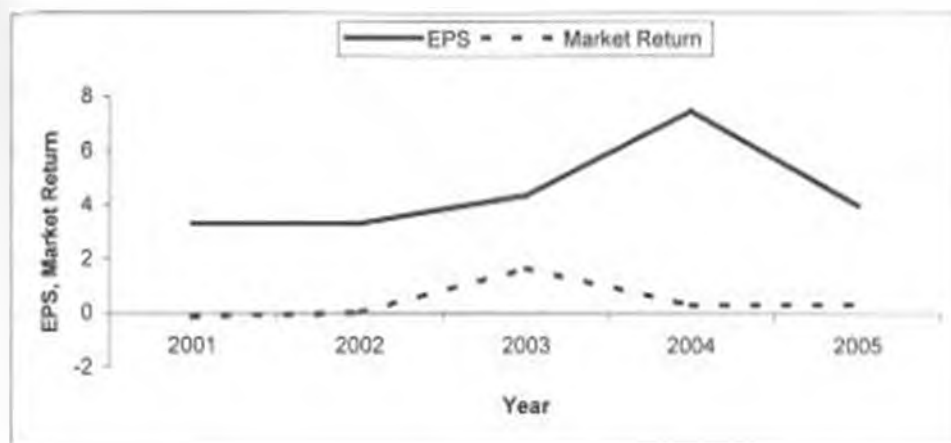
Market return and Return on Assets move have a positive correlation between 2001 and 2002, between 2002 and 2003, Market Return accelerates at a very high rate, while ROA remains stable. In 2003, Market Return decelerates at a high rate but the relationship of the variables is very stable between 2004 and 2005.

Table 4: Trend of Market Return and EPS

Sector		EPS	Market Return
Agriculture	Mean	1.423	0.272
	Std. Deviation	5.669	0.626
Alternative Investment	Mean	3.399	0.237
	Std. Deviation	6.461	0.826
Commercial Services	Mean	5.171	0.676
	Std. Deviation	3.631	1.515
Finance & Investment	Mean	3.704	0.448
	Std. Deviation	3.714	0.858
Industrial & Allied	Mean	8.776	0.601
	Std. Deviation	8.799	1.258
Total	Mean	4.494	0.447
	Std. Deviation	6.347	1.060

Data sourced from NSE handbook 2005.

Figure 11: Trend of Market Return and EPS



Data sourced from NSE handbook 2005.

4.3.3 Trend of Market Return and EPS

Market return and EPS generally have positive correlation, moving in the same direction over the five years. A slight discrepancy is observed between 2003 and 2004, where EPS accelerates, while Market Return decelerates. Between 2004 and 2005, EPS decelerates while Market Return accelerates moderately.

4.4 Correlation Matrix

According to the results in Table 5 below, there exists a positive relationship between Earnings per Share and market Return (0.163), Return on Equity and Market Return (0.151), and a significant positive relationship between Return on Assets and Market Return (0.197). A significant positive relationship also exists between Earnings per Share and Return on Assets ($R=0.680$, $p\text{-value}=0.000$); and between Earnings Per Share and Return on Equity ($R=0.745$, $p\text{-value}=0.000$). There also exists a significant positive relationship between Market Return and Return on Assets ($R=0.197$, $p\text{-value}=0.049$) and also between Return on Assets and Return on Equity ($R=0.665$, $p\text{-value}=0.000$).

Table 5: Correlation Matrix

		EPS	ROA	ROE	MarketRet
EPS	Pearson Correlation	1	.680(**)	.745(**)	.163
	P-value		.000	.000	.105
ROA	Pearson Correlation	.680(**)	1	.665(**)	.197(*)
	P-value	.000		.000	.049
ROE	Pearson Correlation	.745(**)	.665(**)	1	.151
	P-value	.000	.000		.134

Market Return	Pearson Correlation	.163	.197(*)	.151	1
	P-value	.105	.049	.134	

** Correlation is significant at the 0.01 level (2-tailed)
 Correlation is significant at the 0.05 level (2-tailed).

Data sourced from NSL handbook 2005.

4.5 Regression Relationship

In order to establish which of the above variables best explains Market Return and because the variables are correlated, a stepwise regression model was carried out. The results revealed that Return on Assets best explained Market Return better than any other independent variables.

Table 6: Regression analysis

	Coefficients	Std error	t-statistics	P-value	R-square
B_0	0.279	0.134	2.083	0.040	0.039
B_1 (ROA)	1.276	0.641	1.991	0.049	

CHAPTER FIVE

5. CONCLUSIONS AND RECOMMENDATIONS

The study set out to test the existence of noise in the financial statement based measures of performance for firms listed at the NSE. This was done by testing the correlation between accounting variables; Earnings per share, Return on Assets and Return on Equity and market based variable (Market Return) computed from listed firms share prices and dividend.

The study established existence of correlation between the accounting variables and market return. Therefore, there is no existence of noise in the financial statement based reporting for firms listed at the Nairobi Stock Exchange. Positive correlation was established between Market Return and the financial statement based measures of performance investigated. The correlation was significant between Market Return and Return on Assets at the 5% level of significance, an indication that Return on Assets better explains Market Return than the other two variables, Return on Equity and Earnings per Share. A positive correlation was also established between Return on Equity, Earnings per Share and Market Return.

In order to establish which of the financial statement based variables best explains Market Return and because the variables are correlated, a stepwise regression model was carried out. The results revealed that Return on Assets best explained Market Return better than any other independent variables.

The results of the study can be interpreted to mean that financial statement reporting for firms listed at the NSE is efficient. This efficiency cannot be regarded as too high since discrepancies were obtained from data analysis for a few years, between the market based and financial statement based variables. These could be unique to the occurrences of various firm's specific operations or financial market operations at that point but this can be investigated in another study.

5.1 Recommendations for further research

The study can be enhanced by furtherance of correlation analysis for firms that are not listed at the Nairobi Stock Exchange. This will attest the efficacy of financial reporting for non-listed firms whose reporting requirements may not be as stringent as those of listed firms.

5.2 Limitations of the study

The study period of five years may not be adequate to draw conclusions of the correlation between accounting based and market based measures of performance for all firms due to the differences in various firm's operations and experiences during this period. Any unusual occurrences for some firms would distort the final outcome of the analysis.

The study only covered companies listed at the NSE, it would be important to have a research identity a variable for non-listed firms for comparison against the firm's accounting variables.

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APPENDIX I

MAIN INVESTMENTS MARKET SEGMENT (MIMS)

Agriculture

- 1 Unilever Tea (K) Ltd
- 2 Rea Vipingo Ltd
- 3 Sasini Tea & Coffee Ltd
- 4 Kakuzi Ltd

Commercial and Services

- 1 Access Kenya Group
- 2 Marshalls E A Ltd
- 3 Car & General Ltd
- 4 Hutchings Biemer Ltd
- 5 Kenya Airways Ltd
- 6 CMC Holdings Ltd
- 7 Uchumi Supermarkets Ltd
- 8 Nation Media Group Ltd
- 9 TPS (Serena) Ltd
- 10 ScanGroup Ltd
- 11 Standard Group Ltd

Finance and Investment

- 1 Barclays Bank of Kenya Ltd
- 2 CFC Bank Ltd
- 3 Housing Finance Company of Kenya Ltd
- 4 ICDC Investment Company Ltd
- 5 Kenya Commercial Bank Ltd
- 6 Kenya Re Insurance Corporation Ltd
- 7 National Bank of Kenya Ltd
- 8 Pan Africa Insurance Holdings Co Ltd
- 9 Diamond Trust Bank of Kenya Ltd
- 10 Jubilee Insurance Co Ltd
- 11 Standard Chartered Bank Ltd
- 12 National Industrial Credit Bank Ltd
- 13 Equity Bank Ltd

Industrial and Allied

- 1 Athi River Mining Ltd
- 2 BOC Kenya Ltd
- 3 British American Tobacco Kenya Ltd
- 4 Carbacid Investments Ltd
- 5 Olympia Capital Holdings Ltd
- 6 E A Cables Ltd
- 7 E A Breweries Ltd
- 8 Sameer Africa Ltd
- 9 Kenya Oil Ltd
- 10 Mumias Sugar Company Ltd
- 11 Unga Group Ltd
- 12 Bambun Cement Ltd
- 13 Crown Berger (K) Ltd
- 14 E A Portland Cement Co Ltd
- 15 Kenya Power & Lighting Co Ltd
- 16 Total Kenya Ltd
- 17 Eversedy East Africa Ltd
- 18 Kengen Ltd

APPENDIX II

NSE LISTED COMPANIES USED IN THE STUDY

MAIN INVESTMENT MARKET SEGMENT (MIMS)

Agricultural

Unilever Tea (K) Ltd
Sagini Tea & Coffee Ltd
Rea Vipingo Ltd
Kakuzi Ltd

Commercial & Services

Nation Media Group
Kenya Airways
CMC Holdings
Car & General

Finance & Investment

Housing Finance Company of Kenya
Pan Africa Insurance Holdings Co. Ltd
ICDC Investment Company Ltd
Standard Chartered Bank Ltd

Industrial & Allied

British American Tobacco Kenya Ltd
BOC Kenya Limited
East African Breweries Ltd
Unga Group Ltd

ALTERNATIVE INVESTMENT MARKET SEGMENT (AIMS)

EAAGADS Ltd
Limuru Tea Co. Ltd
Williamson Tea
Standard Group

APPENDIX III:

COMPANY NAME	NET ANNUAL EARNINGS				
	2001	2002	2003	2004	2005
MAIN INVESTMENT MARKET SEGMENT (MIMS)					
Agricultural					
Unilever Tea (K) Ltd	223,274,000	124,029,000	62,254,000	360,948,000	67,603,000
Sasini Tea & Coffee Ltd	15,360,000	(8,940,000)	(67,224,000)	771,182,000	(388,594,000)
Rea Vpingo Ltd	3,966,000	24,809,000	3,225,000	128,666,000	124,482,000
Kakuzi Ltd	(45,223,000)	7,583,000	(11,795,000)	83,733,000	(73,787,000)
Commercial & Services					
Nation Media Group	236,700,000	403,800,000	602,800,000	641,400,000	716,200,000
Kenya Airways	1,357,000,000	889,000,000	400,000,000	1,302,000,000	3,020,000,000
CMC Holdings	98,882,000	152,780,000	178,988,000	262,982,000	339,987,000
Car & General	(5,670,000)	7,451,000	60,679,000	38,544,000	193,945,000
Finance & Investment					
Housing Finance Company of Kenya	(188,543,000)	55,851,000	51,847,000	59,976,000	58,799,000
Pan Africa Insurance Holdings Co Ltd	163,911,000	(15,614,000)	(23,440,000)	93,811,000	176,605,000
ICDC Investment Company Ltd	154,334,000	246,522,000	156,149,000	241,350,000	295,234,000
Standard Chartered Bank Ltd	2,243,062,000	2,268,127,000	2,788,717,000	1,832,847,000	2,452,174,000
Industrial & Allied					
British American Tobacco Kenya Ltd	604,109,000	823,120,000	1,140,021,000	1,210,194,000	1,382,038,000
BOC Kenya Limited	75,050,000	105,481,000	152,619,000	180,117,000	207,448,000
East African Breweries Ltd	1,573,408,000	2,319,915,000	1,500,008,000	3,849,068,000	4,789,912,000
Unga Group Ltd	(118,968,000)	(56,813,000)	(27,046,000)	(101,948,000)	72,542,000
ALTERNATIVE INVESTMENT MARKET SEGMENT (AIMS)					
EAAGADS Ltd	647,000	3,861,000	(4,273,000)	(1,434,000)	8,802,000
Limuru Tea Co Ltd	(2,983,000)	2,877,000	8,047,000	9,856,000	(3,159,000)
Williamson Tea	138,238,000	(28,922,000)	64,354,000	80,421,000	84,231,000
Standard Group	-	-	(46,483,000)	77,780,000	66,408,000
20 COMPANY AVERAGE	326,844,100	362,306,860	349,373,360	664,952,668	678,743,408

COMPANY NAME

2001

MAIN INVESTMENT MARKET SEGMENT (MIMS)**Agricultural**

Unilever Tea (K) Ltd	48,875,000
Sasini Tea & Coffee Ltd	38,008,250
Rae Vpingo Ltd	60,000,000
Kakuzi Ltd	19,509,999

Commercial & Services

Nation Media Group	53,478,945
Kenya Airways	481,615,484
CMC Holdings	24,279,560
Car & General	22,279,516

Finance & Investment

Housing Finance Company of Kenya	115,000,000
Pan Africa Insurance Holdings Co. Ltd	48,000,000
ICDC Investment Company Ltd	48,031,291
Standard Chartered Bank Ltd	247,243,000

Industrial & Allied

British American Tobacco Kenya Ltd	100,000,000
BOC Kenya Limited	19,525,448
East African Breweries Ltd	105,733,981
Unga Group Ltd	52,954,468

ALTERNATIVE INVESTMENT MARKET SEGMENT (AIMS)

EAAGADS Ltd	8,039,250
Limuru Tea Co. Ltd	600,000
Williamson Tea	8,758,320
Standard Group	12,811,859
20 COMPANY AVERAGE	74,841,672

TOTAL SHARES

2002	2003	2004	2005
48,875,000	48,875,000	48,875,000	48,875,000
38,008,250	38,008,250	38,008,250	38,008,250
60,000,000	60,000,000	60,000,000	60,000,000
19,598,998	19,598,998	19,598,998	19,598,998
53,478,945	53,478,945	53,478,945	71,305,280
461,615,484	461,615,484	461,615,484	461,615,484
24,279,560	24,279,560	48,559,120	48,559,120
22,279,616	22,279,616	22,279,616	22,279,616
115,000,000	115,000,000	115,000,000	115,000,000
48,000,000	48,000,000	48,000,000	48,000,000
54,995,183	54,995,183	54,995,183	54,995,183
247,243,000	247,243,000	271,967,811	271,967,811
100,000,000	100,000,000	100,000,000	100,000,000
19,525,000	19,525,000	19,525,000	19,525,000
109,030,506	109,030,506	109,828,772	858,978,630
52,954,468	63,090,728	63,090,728	63,090,728
8,038,250	8,038,250	8,038,250	8,038,250
600,000	600,000	600,000	600,000
8,758,320	8,758,320	8,758,320	8,768,320
12,811,858	65,133,358	65,133,358	65,133,358
76,254,872	78,377,688	80,867,742	109,218,661

COMPANY NAME

2001

MAIN INVESTMENT MARKET SEGMENT (MIMS)

Agricultural

Unilever Tea (K) Ltd	5,987,642,000
Sasini Tea & Coffee Ltd	1,930,874,000
Rea Veringo Ltd	612,225,000
Kakuzi Ltd	2,269,785,000

Commercial & Services

Nahon Media Group	2,150,900,000
Kenya Airways	18,569,000,000
CMC Holdings	2,370,346,000
Car & General	340,939,000

Finance & Investment

Housing Finance Company of Kenya	985,420,000
Pan Africa Insurance Holdings Co. Ltd	1,601,823,000
ICDC Investment Company Ltd	2,219,005,000
Standard Chartered Bank Ltd	5,618,317,000

Industrial & Allied

British American Tobacco Kenya Ltd	4,872,791,000
BOC Kenya Limited	1,029,565,000
East African Breweries Ltd	11,368,191,000
Unga Group Ltd	2,157,524,000

ALTERNATIVE INVESTMENT MARKET SEGMENT (AIMS)

EAAGADS Ltd	193,733,000
Limuru Tea Co. Ltd	35,869,000
Williamson Tea	2,182,142,000
Standard Group	64,281,000
20 COMPANY AVERAGE	3,209,167,650

TOTAL NET ASSETS

2002	2003	2004	2005
4,408,020,000	4,208,098,000	4,250,671,000	4,099,237,000
1,980,310,000	2,778,304,000	3,797,528,000	3,212,126,000
653,977,000	667,660,000	777,987,000	802,222,000
1,734,851,000	1,877,957,000	1,773,550,000	1,450,254,000
2,391,900,000	2,783,400,000	2,857,400,000	3,287,800,000
15,322,000,000	17,136,000,000	21,940,000,000	30,830,000,000
2,484,873,000	2,678,968,000	3,183,700,000	3,405,000,000
343,787,000	377,410,000	427,369,000	722,823,000
1,024,887,000	1,050,950,000	1,119,828,000	1,271,714,000
1,674,332,000	604,381,000	709,144,000	931,339,000
2,340,922,000	2,759,478,000	3,057,034,000	3,934,408,000
5,891,945,000	8,440,903,000	8,083,194,000	9,589,249,000
4,734,575,000	4,807,121,000	4,368,513,000	4,554,512,000
1,050,525,000	1,124,441,000	1,198,479,000	1,324,141,000
12,329,921,000	13,852,671,000	16,864,622,000	18,895,903,000
1,994,692,000	2,318,861,000	2,138,638,000	2,218,340,000
194,478,000	145,443,000	188,074,000	197,724,000
39,881,000	80,407,000	62,239,000	52,428,000
2,113,114,000	3,009,231,000	3,058,548,000	3,108,138,000
238,542,000	278,335,000	422,848,000	448,948,000
3,135,348,600	3,437,691,250	3,917,820,380	4,708,616,308

COMPANY NAME

2001

MAIN INVESTMENT MARKET SEGMENT (MIMS)

Agricultural

Unilever Tea (K) Ltd	491 740,000
Sasini Tea & Coffee Ltd	180 048 000
Raa Vipingo Ltd	384 498,000
Kakuzi Ltd	98 000 000

Commercial & Services

Nation Media Group	178 300,000
Kenya Airways	2,308 000,000
CMC Holdings	121 398,000
Car & General	111 398 000

Finance & Investment

Housing Finance Company of Kenya	575 000,000
Pan Africa Insurance Holdings Co. Ltd	604 431 000
ICDC Investment Company Ltd	564 257 000
Standard Chartered Bank Ltd	1 238 217 000

Industrial & Allied

British American Tobacco Kenya Ltd	10,000 023,000
BOC Kenya Limited	100,181,000
East African Breweries Ltd	3 278 839,000
Linga Group Ltd	337 920 000

ALTERNATIVE INVESTMENT MARKET SEGMENT (AIMS)

EAAGADS Ltd	10,049 000
Limuru Tea Co. Ltd	12,000 000
Williamson Tea	43,782 000
Standard Group	84,181 000
20 COMPANY AVERAGE	1,035,511,900

SHARE CAPITAL + SHARE PREMIUM

2002	2003	2004	2005
491,740,000	491,740,000	491,740,000	491,740,000
190,046,000	190,046,000	190,046,000	190,046,000
384,496,000	384,496,000	384,496,000	384,496,000
98,000,000	98,000,000	98,000,000	98,000,000
267,500,000	267,500,000	267,500,000	267,500,000
2,308,000,000	2,308,000,000	2,308,000,000	2,308,000,000
121,398,000	121,398,000	121,398,000	121,398,000
111,398,000	111,398,000	111,398,000	111,398,000
575,000,000	575,000,000	575,000,000	575,000,000
604,431,000	604,431,000	604,431,000	604,431,000
864,729,000	864,729,000	864,729,000	864,729,000
1,238,217,000	1,238,217,000	1,358,839,000	1,639,839,000
10,000,023,000	10,000,023,000	10,000,023,000	10,000,023,000
100,181,000	100,181,000	100,181,000	100,181,000
3,278,839,000	3,278,839,000	3,278,839,000	3,278,839,000
337,920,000	337,920,000	337,920,000	337,920,000
10,049,000	10,049,000	10,049,000	10,049,000
12,000,000	12,000,000	12,000,000	12,000,000
43,782,000	43,782,000	43,782,000	43,782,000
64,161,000	64,161,000	64,161,000	64,161,000
1,054,995,500	1,054,995,500	1,061,176,600	1,075,176,600

COMPANY NAME
MAIN INVESTMENT MARKET
SEGMENT (MIMS)

	2001	2002	2003	2004
Agricultural			P₁	
Unilever Tea (K) Ltd	72.00	64.00	68.00	90.50
Sasini Tea & Coffee Ltd	19.80	13.20	17.30	26.50
Rea Vingo Ltd	2.90	2.55	8.18	9.50
Kakuzi Ltd	36.90	14.68	14.68	48.80

Commercial & Services

Nation Media Group	43.26	84.00	191.08	170.00
Kenya Airways	7.55	7.85	5.75	9.60
CMC Holdings	9.00	17.25	68.08	55.00
Car & General	10.00	10.00	68.08	16.00

Finance & Investment

Housing Finance Company of Kenya	6.00	5.20	12.08	8.50
Pan Africa Insurance Holdings Co. Ltd	13.10	7.00	33.50	21.00
ICDC Investment Company Ltd	47.00	19.00	51.08	67.00
Standard Chartered Bank Ltd	47.00	62.00	191.00	122.00

Industrial & Allied

British American Tobacco Kenya Ltd	49.00	54.00	276.00	208.00
BOC Kenya Limited	30.00	28.75	99.58	137.00
East African Breweries Ltd	79.60	82.50	226.08	446.00
Unga Group Ltd	7.76	4.10	12.08	14.50

ALTERNATIVE INVESTMENT MARKET SEGMENT (AIMS)

EAAGADS Ltd	20.50	19.00	15.98	17.00
Limuru Tea Co. Ltd	394.00	394.00	160.00	358.00
Williamson Tea	108.00	81.00	70.08	80.00
Standard Group	9.50	9.48	39.75	43.50

2005	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
Po					Do					
98.50	68.00	72.80	54.00	66.00	90.50	2.00	2.50	8.00	8.00	2.00
32.50	34.75	19.80	13.20	17.30	20.50	1.00	0.60	8.00	2.50	8.00
28.50	3.70	2.90	2.55	5.15	9.50	0.00	0.25	8.40	8.80	8.80
48.25	68.00	38.80	14.65	14.65	40.00	0.00	0.00	8.00	1.00	8.00
190.00	89.00	43.25	84.00	191.00	178.00	1.60	2.90	5.00	8.00	8.00
24.00	7.50	7.55	7.88	8.79	9.60	1.25	8.60	8.50	8.75	1.25
47.25	16.00	9.00	17.28	58.00	65.00	0.75	1.80	1.00	1.00	1.80
28.00	19.00	10.00	10.00	68.00	15.00	0.80	8.90	8.67	8.67	8.67
13.95	5.50	6.00	5.20	12.85	8.60	0.80	8.00	8.00	8.00	8.00
48.00	11.00	13.10	7.80	23.60	21.00	0.80	8.00	8.00	1.00	1.20
66.50	49.50	47.80	19.00	51.00	67.00	2.00	2.00	3.20	3.00	3.00
138.00	48.50	47.80	62.00	191.00	122.00	8.25	8.25	2.60	8.50	7.50
204.00	60.50	49.00	54.00	276.00	200.00	7.90	9.00	12.50	16.50	12.90
145.00	43.00	30.00	26.75	99.50	137.00	3.65	4.35	4.35	4.50	5.80
149.00	65.50	79.50	82.50	228.00	445.00	9.00	11.50	16.00	18.00	4.50
19.48	16.40	7.75	4.10	12.85	14.50	0.00	0.00	0.00	0.00	0.00
17.00	28.00	20.50	19.00	16.95	17.00	8.50	8.50	8.00	8.00	1.25
347.00	650.00	394.00	394.00	160.00	366.00	8.00	3.00	18.00	15.00	5.00
119.00	87.00	108.00	51.00	70.00	80.00	5.00	8.50	3.75	3.75	5.00
40.25	7.40	5.50	9.48	39.75	43.50	0.80	8.00	8.00	8.00	8.00

APPENDIX IV CORRELATION RESULTS

Table 1 ANOVA Test for the difference by Sector

		Sum of Squares	df	Mean Square	F	Sig.
Market Return	Between Groups	3.028	4	.758	664	.818
	Within Groups	108.124	95	1.138		
	Total	111.149	99			
EPS	Between Groups	600.930	4	150.234	4.213	.003
	Within Groups	3387.519	95	35.658		
	Total	3988.455	99			
ROA	Between Groups	.321	4	.080	3.269	.015
	Within Groups	2.335	95	.025		
	Total	2.658	99			
ROE	Between Groups	7.885	4	1.971	2.763	.032
	Within Groups	68.033	95	.718		
	Total	75.918	99			

Table 2 Post hoc test

Dependent Variable	(I) sector	(J) sector	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
EPS	Agri	Alt	-1.97650	1.88833	.833	-7.2277	3.2747
		Comm	-3.74850	1.88833	.281	-8.9997	1.5027
		Finn	-2.28150	1.88833	.747	-7.5327	2.9697
		Ind	-7.35300(*)	1.88833	.002	-12.6042	-2.1018
	Alt	Agri	1.97650	1.88833	.833	-3.2747	7.2277
		Comm	-1.77200	1.88833	.881	-7.0232	3.4792
		Finn	-.30500	1.88833	1.000	-5.5562	4.9462
		Ind	-5.37650(*)	1.88833	.042	-10.6277	-.1253
	Comm	Agri	3.74850	1.88833	.281	-1.5027	8.9997
		Alt	1.77200	1.88833	.881	-3.4792	7.0232
		Finn	1.46700	1.88833	.937	-3.7842	6.7182
		Ind	-3.60450	1.88833	.320	-8.8557	1.6467
	Finn	Agri	2.28150	1.88833	.747	-2.9697	7.5327
		Alt	.30500	1.88833	1.000	-4.9462	5.5562
		Comm	-1.46700	1.88833	.937	-6.7182	3.7842
		Ind	-5.07150	1.88833	.064	-10.3227	-.1797
	Ind	Agri	7.35300(*)	1.88833	.002	2.1018	12.6042
		Alt	5.37650(*)	1.88833	.042	-.1253	10.6277
		Comm	3.60450	1.88833	.320	-1.6467	8.8557
		Finn	5.07150	1.88833	.064	-.1797	10.3227
ROA	Agri	Alt	-.0459411	.0495754	.886	-1.183804	.091921
		Comm	-.1098697	.0495754	.183	-.247732	.027993
		Finn	-.1289636	.0495754	.078	-.266826	.008899
		Ind	1.543364(*)	.0495754	.020	-.292199	-.016474
	Alt	Agri	.0459411	.0495754	.886	-.091921	1.183804

		Comm	-.0639286	.0495754	.698	-.201791	.073934
		Finn	-.0830225	.0495754	.454	-.220885	.054840
		Ind	-.1083953	.0495754	.194	-.246258	.029467
	Comm	Agri	.1098697	.0495754	.183	-.027993	.247732
		Alt	.0639286	.0495754	.698	-.071914	.201791
		Finn	-.0190939	.0495754	.995	-.156956	.118769
		Ind	-.0444667	.0495754	.897	-.182329	.093396
	Finn	Agri	.1289636	.0495754	.078	-.008899	.266826
		Alt	.0830225	.0495754	.454	-.054840	.220885
		Comm	.0190910	.0495754	.995	-.118769	.156956
		Ind	-.0251728	.0495754	.986	-.163235	.112490
	Ind	Agri	.1543364(*)	.0495754	.020	.016474	.292199
		Alt	.1083953	.0495754	.194	-.029467	.246258
		Comm	.0444667	.0495754	.897	-.093396	.182329
		Finn	.0251728	.0495754	.986	-.112490	.163235
ROE	Agri	Alt	-.3560383	.2676073	.673	1.100218	.388141
		Comm	.8425986(*)	.2676073	.018	1.586778	-.098419
		Finn	-.3419442	.2676073	.705	1.086124	-.402235
		Ind	-.5910707	.2676073	.185	1.335250	.151109
	Alt	Agri	.3560383	.2676073	.673	-.388141	1.100218
		Comm	-.4865602	.2676073	.369	1.230740	.257619
		Finn	.0140941	.2676073	1.000	-.730086	.758274
		Ind	-.2350323	.2676073	.964	-.509147	.979212
	Comm	Agri	.8425986(*)	.2676073	.018	.098419	1.586778
		Alt	.4865602	.2676073	.369	-.257619	1.230740
		Finn	.5006543	.2676073	.340	-.243525	1.244834
		Ind	.2515279	.2676073	.881	-.492652	.492652
	Finn	Agri	.3419442	.2676073	.705	-.402235	1.086124
		Alt	-.0140941	.2676073	1.000	-.758274	.730086
		Comm	-.5006543	.2676073	.340	1.244834	.243525
		Ind	-.2491264	.2676073	.884	-.993306	.495053
	Ind	Agri	.5910707	.2676073	.185	-.151109	1.335250
		Alt	.2350323	.2676073	.964	-.509147	.979212
		Comm	-.2515279	.2676073	.881	-.995708	.492652
		Finn	.2491264	.2676073	.881	-.495053	.991106

* The mean difference is significant at the .05 level

Descriptive Statistics of the variables

	N	Minimum	Maximum	Mean	Std. Deviation
EPS	100	-10.17	35.05	4.4944	6.34724
ROA	100	-.2595	.6226	.131197	.1638005
ROE	100	-1.9253	4.0667	.623813	.6756974
Market Return	100	-.7696	5.8670	.446576	1.0595816

Summary statistics by Sector

Sector		N	Minimum	Maximum	Mean	Std. Deviation
Agn	EPS	20	-10.17	20.29	1.4225	5.66937
	ROA	20	-16.34	29.08	0.43375	10.77852
	ROE	20	-19.253	4.0867	1.97283	10.912270
	MarketRet	20	-5.931	1.7988	2.71528	8.264118
All	EPS	20	-5.27	16.10	3.3980	6.46088
	ROA	20	-11.13	33.29	0.89316	12.07904
	ROE	20	-8.149	3.1117	5.53321	9.371438
	MarketRet	20	-5.885	3.2287	2.38722	8.282102
Comm	EPS	20	-2.8	11.99	6.1710	3.83116
	ROA	20	0.328	39.15	1.53245	11.03834
	ROE	20	-0.527	2.2116	1.039881	7.033515
	MarketRet	20	-7.698	5.8870	6.76273	1.5150827
Finn	EPS	20	-1.82	11.28	3.7040	3.71440
	ROA	20	-2.595	6.226	1.72339	2.289466
	ROE	20	-3.244	2.2558	5.39227	7.439842
	MarketRet	20	-6.632	2.3671	4.47534	8.684728
Ind	EPS	20	-2.20	36.06	8.7755	8.79922
	ROA	20	-13.54	45.99	1.97711	17.26903
	ROE	20	-3.450	2.0707	7.88353	6.807734
	MarketRet	20	-6.651	4.3426	6.00822	1.2582789

OLAP Cube of the Variables (2001-2002)

Sect	Variables	2001	2002	2003	2004	2005	Total
		Mean	Mean	Mean	Mean	Mean	Mean
Agri	EPS	6825	7900	-2625	8.5228	-2.6200	1.4225
	ROA	012577	027027	-002290	175822	003939	043376
	ROE	005866	082475	-087151	1.528367	-531419	197283
	MarketRet	228830	287724	455102	905135	513955	271528
Alt	EPS	3.9025	-0175	4.8675	8.5725	1.6700	3.3990
	ROA	083531	044507	112387	134317	071838	089316
	ROE	084208	022532	461016	687413	656501	553321
	MarketRet	150927	045731	736437	417275	135092	236722
Comm	EPS	2.7650	4.0125	5.5375	5.4675	8.0725	5.1710
	ROA	082785	122726	155917	157379	247416	153245
	ROE	681735	779983	1.095384	1.048705	1.595620	1.039881
	MarketRet	260244	538746	2.499128	-056141	661878	676273
Finn	EPS	3.5525	3.3900	3.5325	3.4000	4.6450	3.7040
	ROA	129147	198114	168599	187534	180200	172339
	ROE	508687	535241	622820	471578	557809	539227
	MarketRet	098970	184373	1.923048	-078278	480304	447534
Ind	EPS	5.6400	8.4800	8.1375	13.4325	8.2075	8.7755
	ROA	095344	158013	198027	239454	297719	197711
	ROE	372037	603880	762826	929287	1.273735	788353
	MarketRet	106220	008451	2.771268	364631	-034021	600822

OLAP Cubes

OLAP Cube of the Variables

	2001	2002	2003	2004	2005	2005
Variables	Mean	Mean	Mean	Mean	Mean	Mean
EPS	3.3085	3.3270	4.3825	7.4790	3.9950	4.4944
ROA	080677	109677	126548	178661	160222	131197
ROE	508162	395805	670979	932670	710449	623613
MarketRet	-129850	027766	1.676997	310524	347441	446576

Correlations Matrix of the variables

		EPS	ROA	ROE	MarketRet
EPS	Pearson Correlation	1	.680(**)	.745(**)	.183
	Sig. (2-tailed)		.000	.000	.105
ROA	Pearson Correlation	.680(**)	1	.665(**)	.197(*)
	Sig. (2-tailed)	.000		.000	.049
ROE	Pearson Correlation	.745(**)	.665(**)	1	.151
	Sig. (2-tailed)	.000	.000		.134
MarketRet	Pearson Correlation	.183	.197(*)	.151	1
	Sig. (2-tailed)	.105	.049	.134	

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Regression

Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	ROA		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= 1.000)

a. Dependent Variable: MarketRet

Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.197(a)	.039	.029	1.0440650	1.394

a. Predictors: (Constant), ROA

b. Dependent Variable: MarketRet

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.322	1	4.322	3.964	.049(a)
	Residual	108.827	98	1.090		
	Total	111.149	99			

a. Predictors: (Constant), ROA

b. Dependent Variable: MarketRet

Coefficients(a)

Model		Unstandardized Coefficients		t	Sig.
		B	Std. Error		
1	(Constant)	.279	.134	2.083	.040
	ROA	1.278	.641	1.981	.049

a. Dependent Variable: MarketRet

Oneway
ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
MarketRet	Between Groups	.3025	4	.756	.664	.618
	Within Groups	108.124	95	1.138		
	Total	111.149	99			
EPS	Between Groups	600.938	4	150.234	4.213	.003
	Within Groups	3387.519	95	35.658		
	Total	3988.455	99			
ROA	Between Groups	.321	4	.080	3.269	.015
	Within Groups	2.335	95	.025		
	Total	2.656	99			
ROE	Between Groups	7.885	4	1.971	2.753	.032
	Within Groups	68.033	95	.716		
	Total	75.918	99			

Olap cubes of the variables by Sector

sector		EPS	ROA	ROE	MarketRet
Agn	Mean	1.4225	043375	197283	271528
	Std Deviation	5.86937	1077852	1.0912270	8264119
Aut	Mean	3.3990	080318	553321	238722
	Std Deviation	6.46088	1297904	9371438	8282102
Comm	Mean	5.1710	183245	1.039881	878273
	Std Deviation	3.83118	1103834	7033515	1.5160827
Econ	Mean	3.7040	172338	538227	447534
	Std Deviation	3.71440	2289468	7439842	8584728
Inj	Mean	8.7755	197711	788383	800822
	Std Deviation	8.79922	1728903	6807734	1.2582789
Total	Mean	4.4844	131197	623813	448678
	Std Deviation	6.34724	1638005	8758974	1.0585818