

RELATIONSHIP BETWEEN ACCRUED EARNINGS, ASSETS
GROWTH AND FUTURE PROFITABILITY OF THE COMPANIES
LISTED ON NAIROBI STOCK EXCHANGE //

BY

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A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT
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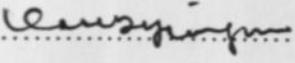


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DECLARATION

This management research project is my original work and has not been presented for degree in any other university.

My parents for their love and invaluable advice through out my academic life, I'm also grateful to my lovely wife, Gertrude and daughter, Germaine for their support while undertaking this project.

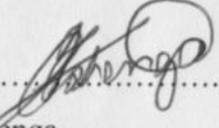
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I'm grateful to my supervisor, Mr. J. Lishenga for his diligent guidance in writing of this paper. I'm highly indebted to my parents for their love and invaluable advice through out my academic life. I'm also grateful to my lovely wife, Gertrude and daughter, Germaine for their support while undertaking this project.

The period of the study is from 1999 to 2004, the year 1999 is a base year. Out of all companies listed on the NSE during this period only 35 companies qualified for this study. Financial reports for companies used in this study were obtained from NSE Handbook and Capital Markets Authority (CMA) library. The multiple regression analysis was performed on the collected data with aid of statistical package (SPSS), to establish relationship between current accrued earnings, growth in long-term net operating assets and Return profitability, for the companies listed on NSE.

After performing statistical tests on the sample of the study, we find that there is no relationship between accrued earnings, growth in long-term net operating assets and one-year-ahead return on assets for the companies listed on NSE.

Abstract

Prior researchers in developed markets have found that, change in accruals is a strong signal of company's future profitability and stock prices. This study aims at determining whether there is any relationship between current accrued earnings, growth in long-term net operating assets and future profitability for the companies listed on NSE.

The period of the study is from 1999 to 2004, the year 1999 is a base year. Out of 49 companies listed on the NSE during this period only 35 companies qualified for this study. Financial reports for companies used in this study were obtained from NSE handbook and Capital Markets Authority (CMA) library. The multiple regression analysis was performed on the collected data with aid of statistical package (SPSS), to establish relationship between current accrued earnings, growth in long-term net operating assets and future profitability, for the companies listed on NSE.

After performing statistical tests on the sample of the study, we find that there is no relationship between accrued earnings, growth in long-term net operating assets and one-year-ahead return on assets for the companies listed on NSE.

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ACRONYMS

GAAP – Generally Accepted Accounting Principles

GrNOA – Growth in Net Operating Assets

GrLNOA- Growth in Long-term Net Operating Assets

IFRS – International Financial Reporting Standards

NCA_t – Net Current Assets in year t

NCA_{t-1} - Net Current Assets in year t-1

NOA – Net operating Assets

NSE - Nairobi Stock Exchange

ROA – Return on Assets

ROA_t – Return on Assets in year t (current profitability)

ROA_{t+1} – Return on Assets in year t + 1 (future profitability)

CHAPTER ONE: INTRODUCTION

1.1 Background

Academic researchers have regarded accounting analysis to be of importance in the evaluation of firms' financial performance. The recent postulation of "accrual anomaly" by Sloan (1996) has raised doubts whether investors' take into proper consideration all the information contained in financial statements. Recent researches have shown that analysis of firms' accruals can help in determining the sustainability of the company's current profitability (Sloan 1996; Xie 2001; Fairfield et al. 2003; Richardson et al. 2005).

The nature of accrual accounting is to accrue and defer past, current and anticipated future cash receipts and disbursement. The accrual process involves a significant amount of estimation of future cash receipts and payments, and a subjective allocation of cash receipts and payments. In doing so, the accrual process creates accounts of varying reliability (Richardson 2003 and Richardson et al. 2005).

Accruals or deferrals arise in the financial statements due to the nature of the accrual accounting adopted in the preparation of financial statements as provided in GAAP and IFRS. The both GAAP and IFRS require financial statements to be prepared on accrual basis of accounting. Under the accrual basis of accounting transactions and events are recognized when they occur (and not as cash or its equivalent is received or paid) and they are recorded in the accounting records and reported in the financial statement of the period of which they relate.

Accrual accounting attempts to make reported earnings more meaningful by better matching costs with related revenues. In this system, earnings are the sum of the cash flows and changes in accrual accounts. This attempt to make the data more reliable introduces subjective judgments and assumptions. Hence, accrual accounts are prone to error; both intentional and deliberate thus studying changes in accrual accounts can be rewarding (Mahedy 2005).

The researches have come up with various definitions of accruals. Some have defined accruals as the change in non-cash working capital less depreciation (Sloan 1996; Xie 2001; Fairfield et al. 2003). This definition fails to include accruals related to non-current operating assets/liabilities and financial assets/liabilities (Richardson et al. 2005).

Richardson et al. (2005) argues that all accounts are manifestations of accrual accounting and in its absence the items that will appear in the balance sheet is only cash and owners equity.

The natural goal for financial accounting research is to investigate how accruals facilitate investor in decision-making (Richardson et al. 2005). The accrual accounting seeks to provide more relevant information to investors (Richardson et al. 2005).

Prior academic researches have shown that current earnings (profits) can be decomposed into accruals and cash flows from operations, whereas growth in Net Operating Assets (NOA) can be decomposed into accruals and growth in long-term net operating assets (Fairfield et al. 2002; Richardson et al. 2005).

The total accruals will include working capital accruals (related to changes in non-cash current operating asset/liability accounts), non-current operating accruals (related to changes in non-current operating asset/liability accounts), and financing accruals (related to changes in non-cash financial asset/liability accounts) (Richardson et al. 2005).

The examples of current operating assets and liabilities are inventories, receivables and accounts payables, whereas non-current operating accruals include physical plant and equipment and deferred taxes (Mahedy 2005).

Total accruals can also be defined as the change in non-cash working capital less depreciation. Whereas non-current operating accruals as a growth in long-term net operating asset, thus splitting growth in NOA into accruals and growth in long-term NOA (Fairfield et al. 2003).

After performing tests to determine whether investors rationally price publicly available information, previous academic researchers have shown that market misprices accruals. This means that markets do not efficiently impound accrual information into the price structure (Sloan 1996; Collins and Hribar 1999; Xie 2001; Fairfield et al.2003).

According to Sloan (1996), market misprices accruals because it fails to appreciate that, the accrual component of earnings is less persistent than the cash flow component and failure to understand implication of accruals for one year a head ROA.

The documentation of 'accrual anomaly' by Sloan (1996), raised a stream of research that focused on the mispricing and capability of accrual analysis to predict future earnings (Collins and Hribar 1999; Xie 2001; Fairfield et al. 2003; Richardson 2003). The results of these researches have shown that a change in accruals is a strong signal of a company's future profitability and stock price.

Sloan (1996) finds that the market fails to properly price the accrual component of earnings. The market erroneously overestimates the persistence of the accrual component of annual earnings while underestimating the persistence of the cash flow component (Sloan 1996). The market appears to overreact to earnings that contain a large accrual component. The over-reaction is subsequently reversed when earnings are reported in the following year and the market learns that the earnings of the previous period are not sustainable (Sloan 1996).

Consequently, this leads to an 'accrual anomaly', where firms with relatively high levels of accruals experience negative future abnormal stock returns, which are concentrated around future earnings announcement. Conversely, the firms with relatively low levels of accruals experience positive future abnormal stock returns that are also concentrated around future earnings announcement. The accrual anomaly arises due to predictability of stock abnormal returns after formation of portfolios on the basis of firm's level of accruals.

The results of the studies after Sloan (1996) have agreed on the existence of accrual anomaly, however, the cause of this anomaly has been contentious. Some studies suggest that accrual anomaly is likely attributable to the market mispricing of growth in Net Operating Assets (NOA), regardless of whether the growth emerges in the form of changes in working capital or growth in long term net operating assets (Fairfield et al. 2003).

Therefore, the accrual anomaly documented by Sloan (1996) may be one attribute of amore general anomaly, whereby the market misprices growth in net operating assets (Fairfield et al. 2003).

Growth in Net Operating Assets (GrNOA) is one of attributes of firm's growth that Fairfield et al. (2003) correlated with earnings, and concluded that it was responsible for the lower persistence of the accrual component of earnings.

Fairfield et al. (2003) defined Net Operating Assets (NOA) as the operating assets (excluding cash) minus operating liabilities. Growth in Net Operating Assets (GrNOA) is annual change in net operating assets, whereas Growth in long-term net operating assets refers to growth in net operating assets other than accruals. Growth in Net Operating Assets (NOA) is seen as an indication of an increase in investment levels of a firm.

Fairfield et al. (2003) finds that after controlling for current ROA, both components of the growth in net operating assets (GrNOA), that is, accrued earnings and Growth in Long Term Net Operating Assets (GrLNOA) have equivalent negative associations with one-year-ahead ROA.

According to Fairfield et al. (2003) the negative association between the components of growth in net operating assets and one-year-ahead ROA, is because conservative bias accounting principles and diminishing marginal returns to increased investment (as a result of growth in net operating Assets) tend to reduce profitability for growing firms.

The conservative bias accounting procedures results in investments that appear relatively less profitable in early years and more profitable in later years. Hence, biasing accounting rates of return on new investments downwards relative to the returns on existing investments (Penman 2001).

The diminishing marginal returns on investments arise when firms exploit their most profitable investment opportunities before undertaking less profitable investments. Conversely, increasing marginal returns on divestment arise when firms divest their least profitable investments (Stigler 1963).

Thus, both conservative accounting and diminishing marginal returns suggest that firms investing more in net operating assets (NOA) during year t , will experience lower one-year-ahead ROA relative to other firms, that is, for the firms with similar ROA.

1.2 Problem Statement

Sloan (1996) after relating accrued earnings and future profitability concluded that, firms' with reported income that has high accruals, experienced a decline in earnings performance in the following year. Sloan (1996) attributed the findings to the lower persistence of accrual component of earnings compared to cash flow component.

Whereas, Fairfield et al. (2003) documents that, growth in Net Operating Assets (GrNOA), has a negative incremental association with one-year-ahead ROA after controlling for current ROA. Fairfield et al. (2003) argued that Growth in Net Operating Assets was responsible for the lower persistence of accrued component of earnings.

Richardson et al. (2005) agreed with Fairfield et al. (2003) findings. However, Richardson et al. (2005) disagreed partly with Fairfield et al. (2003) by concluding that temporary accounting distortions play a significant role in the lower persistence of accrual component of earnings.

Therefore, the prior researches in developed financial market have indicated there exists a correlation between the one-year-ahead ROA and accrued earnings. Further the researches have shown the presence of correlation between one-year-ahead ROA and growth in net operating assets, the correlation which this study intends to investigate at NSE.

There are prior studies at NSE that have correlated firms' ROA with price book value ratio (Marangu 2004) and cash flow (Kiprono 2004). Marangu (2004) documented empirical evidence that there is a statistically significant positive relationship between price book value ratio and financial statement variables. According to Marangu (2004) the best predictor variables were return on assets (ROA), return on equity (ROE) and dividend per share. Marangu (2004) suggests that managers can control these variables to influence the price to book value ratio of their firms.

Kiprono (2004) research results show that there is no relationship between cash flow of the firms listed on NSE with their current ROA. However, he failed to consider cash flow as a predictor of the future profitability and left out accrual as a component of current earnings, which has implications to company's future performance.

Therefore, at NSE there lacks documented empirical evidence on relationship between firms' future profitability (ROA_{t+1}) and components of growth in net operating assets, that is, accrued earnings and growth in long term net operating assets. This raises a need to determine whether the components of assets growth as documented by Fairfield et al. (2003) can be used to predict future profitability of the companies listed on NSE.

To the best of the researchers' knowledge, no study has been carried out on the NSE database on the existence of relationship between components of assets growth and future profitability. The current study is therefore motivated by the need to contribute to the literature that authenticates the relationship between the firms' ROA and financial variables by adducing evidence from the NSE.

The research questions that this study seeks to answer include:

- Is there any relationship between the accruals, growth in Long-term Net Operating Assets and future profitability for the companies listed on NSE?
- Can accrued earnings and growth in long-term net operating assets be used to predict future earnings?

1.3.2 Investors

1.3 Hypothesis of the study

The hypothesis of the study can be stated as follows:

- Future profitability (ROA_{t+1}) is not related to accrued earnings
- Future profitability (ROA_{t+1}) is not related to growth in Long-term Net Operating Assets

Table 1: Expected signs of the coefficients of explanatory variables

Dependent Variables	Explanatory Variables	Expected Signs
ROA_{t+1}	ACC_t	-
	$GrLNOA_t$	-

1.4 Objective of the Study

The objectives of the study are:

- To determine the nature of relationship between accrued earnings and future profitability for the companies listed on NSE.
- To determine the nature of relationship between Growth in Long-term Net Operating Assets ($GrLNOA$) and future profitability for the companies listed on NSE.

1.5.1 Importance of the Study

The study will be of great importance to investors, companies, competitors and regulators in the Kenya financial market.

1.5.2 Investors

Potential investors' main aim is to invest in firms with prospects of higher future sustainable profits. This study will provide an analytical tool to assist both current and potential investors in making informative investment decisions.

1.5.3 Management

Management is required to make decisions with an intention to maximize future profits, which is the main objective of any business undertaking. This study will equip managers of the companies listed on NSE with an analytical tool to help out in making future plans for the firm.

1.5.4 Competitors

Competitors' needs tools to analyze weaknesses and strengths of their opponents to enable them make decisions to outperform them. This study will provide a tool that will help firms not only in comparing future profitability with their opponents but also in making decisions that will enable them outshine their competitors.

1.5.5 Regulators

The study will assist the regulators to understand the implications of accruals to firms' performance, hence formulate rules that will make the preparation of financial statements to be more objective.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Accrual in accounting refers to accumulated and deferred past, current and anticipated future cash receipts and disbursements. The firms' financial statements are required to be prepared on accrual accounting principles as provided in GAAP and IFRS 1. The accrual process involves significant amount of estimation of future cash receipts and payments. This leads to subjective allocation of cash receipts and payments in an effort to match revenue and cost to create reliable accounts for the users.

Net Operating Assets (NOA) refers to operating assets minus operating liabilities (Fairfield et al. 2003). Purchasing of more assets and venturing into new business amounts to firm's assets growth. Therefore growth in Net Operating Assets in a specified period of time is Net Operating Assets at the end minus Net Operating Assets at the beginning of the period. Growth in Net Operating Assets (NOA) is seen as an indication of an increase in investment levels of a firm.

Prior researchers documented that accrual component is contained in both firms' earnings (Wilson 1987; Sloan 1996) and growth in net operating assets (Fairfield et al. 2003 and Richardson et al. 2005). The level of accrual component has shown to affect the sustainability of firms' profitability (Sloan 1996) and firms' growth (Fairfield et al. 2003).

To find evidence as to whether the level of accrual affects the sustainability of firms' earnings has led to two streams of research.

One stream of research follows Sloan's (1996) lead in arguing that this sustainability of earnings is attributable to accounting distortions that has led to the mispricing of earnings components (Xie 2001; Collins and Hribar 1999; Richardson et al. 2005).

The other stream of research argues that the earning sustainability is attributable to a more growth related factors, such as, diminishing returns to new investment that explain the lower persistence of accruals (Fairfield et al. 2003).

2.2 Accrued earnings

Sloan (1996) defines earnings as operating income after depreciation, that is, income from continuing operations. The definition excludes non-recurring items such as extraordinary items, discontinued operations, special items and non-operating income.

Sloan (1996) computes accrual component of earnings using the information from the balance sheet and income statement. Sloan (1996) expressed accruals as change in non-cash working capital less depreciation.

Moreover, Sloan (1996) defined cash flow component as income from operations minus accruals. Sloan (1996) standardized the three variables by firm size (total assets) to facilitate comparisons. Total assets are measured as the average of the beginning and end of year book value of total assets.

Sloans (1996) argues that cash flow from operations, as a measure of performance, is less subject to distortion than is the net income figure. The accruals figure is distorted because accrual accounting system relies on accruals, deferrals, allocations and valuations that are highly subjective. Sloan (1996) concluded that while both components contribute to current earnings, current earnings performance is less likely to persist if it is attributable primarily to the accrual component of earnings as opposed to cash flow component.

Collins and Hribar (1999) investigated whether 'accrual anomaly' documented by Sloan (1996) will hold for quarterly data. In conformation with Sloan (1996) findings, Collins and Hribar (1999) find that the market appears to overestimate (under estimate) the

persistence of the accrual (cash flow) component of quarterly earnings and , therefore, tends to overprice (under price) accruals (cash flows).

Xie (2001) defined earnings as income before extraordinary items, and total accruals ($ACCR_t$) as the difference between earnings and cash from operations. While defining cash flow as net cash flows from operating activities.

To enable comparison Xie (2001) divided all the three variables by beginning-of-year total assets. Xie (2001) split the total accruals into normal and abnormal accruals with an aim to investigate whether stock prices rationally reflect the one-year-ahead earnings implications of abnormal accruals.

According to Mahedy (2005) accrual accounting earnings are the sum of the cash flows and the changes in balance-sheet accrual accounts. Mahedy (2005) argues that accruals range from current operating assets and liabilities, such as inventories and accounts to non-current operating accruals such as physical plant and equipment and deferred taxes. Mahedy (2005) research results were consistent with Sloan (1996) that accrual component of earning is not reliable and thus less persistent compared to cash flow component.

Accrual accounting centers on the identification and measurement of assets and liabilities, with accruals representing changes in non-cash assets and liabilities (Richardson et al. 2005).

Richardson et al. (2005) defined earnings as operating income after depreciation deflated by beginning net operating assets. Richardson et al. (2005) incorporated non-current operating assets into their definition of accruals, and referred to the sum of working capital accruals and non-current operating accruals as total operating accruals. Richardson et al. (2005) expressed total accruals (ACC) as the change in net operating assets (NOA) deflated by lagged operating assets

Fairfield et al. (2003) recognized accruals as a component of both growth in net operating assets and profitability (earnings). Fairfield et al. (2003) defined earnings as operating income deflated by contemporaneous average total assets. They defined accruals as growth (net change) in operating working capital accounts (other than tax liabilities) minus current-period depreciation and amortization expense.

Since both cash flow and accruals are components of earnings, Fairfield et al. (2003) defined cash flow from operations as the operating income less accruals. For comparison purpose Fairfield et al. (2003) scaled the three variables, that is, earnings, accruals and cash flow with average total assets.

2.3 Net Operating Assets (NOA)

The level of firm's net operating assets (NOA) affects firm's growth (Fairfield 2003; Mahedy 2005; Richardson et al. 2005). According to Richardson et al. (2005) accruals can increase either because of real investment growth (whereby more operating assets lead to increased production and sales), or because of reduced efficiency (whereby more operating assets are required to generate the same level of production and sales).

Mahedy (2005) argues that accruals can be defined more broadly to include non-current operating accruals, such as physical plant and equipment and deferred taxes. According to Mahedy (2005) both current and non-current operating accruals make up net operating accruals, and if financial accruals are added the outcome is total accruals which encompass all balance-sheet accounts other than cash and shareholder equity.

Richardson et al. (2005) defined net operating assets as the difference between operating assets and operating liabilities. Where operating assets is equal to the sum of current operating assets and non-current operating assets and operating liabilities is equal to the sum of current operating liabilities and non-current operating liabilities.

Fairfield et al. (2003) defined net operating assets (NOA) as operating assets (excluding cash) minus operating liabilities. Net Operating Assets (NOA) of a firm can change either due to increase or reduction in firm's investment levels. Fairfield et al. (2003) defined growth in net operating (GrNOA) as annual change in Net Operating Assets (NOA). Further Fairfield et al. (2003) defined growth in long-term net operating assets (GrLTNOA) as growth in net operating assets other than accruals since both growth in long-term net operating assets and accruals are components of Growth in Net Operating Assets (GrNOA).

2.4 Relationship between Accrued Earnings and Future profitability

Academic researchers have correlated accruals with future profitability with a view to finding the association between the two variables, and whether the current levels of components of earning affect the earnings sustainability (Wilson 1987; Sloan 1996; Collins and Hribar 1999; Xie 2001; Richardson et al. 2005).

Wilson (1987) investigated whether accrual component and funds components of earnings have incremental information content beyond earnings. To carry out the study Wilson (1987) split earnings into two parts, that is, funds from operation and accrual component. Wilson (1987) defined funds component as working capital from operations and accrual component as non-current accrual variables. The empirical results of this study implied that both of these components have information content.

Sloan (1996) focused on a role of accruals as a component of profitability and disintegrated current earnings into accruals and cash flows. Sloan (1996) finds that firm with reported income that has high accruals experience a decline in earnings performance in the following year. In addition, stock prices fail to impound the implications of current accruals for future earnings, leading to predictable return patterns for firms with high accruals

Sloan (1996) defined accrual as the change in non-cash working capital less depreciation expense. Sloan (1996) has shown that the persistence of current earnings into the future depends on the relative magnitudes of the cash and accrual components of current earnings. Sloan's (1996) results suggest that the market fail to appreciate that the accrual component of earnings is less persistent than the cash flow component. Sloan (1996) results indicated that firms with high accruals (or large gap between net income and operating cash flow) experience a decline in earnings performance not anticipated by investors, resulting in predictable future returns.

Sloan (1996) separated companies into categories of high current accruals and low current accruals and observed the changes in their return on assets in five years before and after the measurement date. The study showed that on average, reported earnings and return on assets for the decile of companies with the highest accrual growth increased rapidly prior to the measurement date but tended to reverse sharply soon thereafter.

Collins and Hribar (1999) carried a study to investigate whether the accrual anomaly documented by Sloan (1996) for annual data holds for quarterly data, and whether this form of market mispricing is distinct from post-earnings announcement drift anomaly.

The empirical results Collins and Hribar (1999) from findings showed that the market appears to overestimate (underestimate) the persistence of the accrual (cash flow) component of quarterly earnings, and therefore tends to overprice (under price) accruals (cash flows).

Collins and Hribar (1999) suggests that one may be able to exploit the different persistence properties of accrual and cash flow components of earnings to improve upon extant forecasting models that rely on past earnings.

However, Richardson et al. (2005) attributes the lower persistence of the accrual component of earnings to temporary accounting distortions. Richardson et al. (2005)

argue that some of these accounting distortions are as a result of intentional managerial manipulation of accruals.

2.5 Relationship between Growth in Net Operating Assets (GrNOA) and future profitability

Another stream of literature argues that the lower persistence of accrual component is attributable to amore general growth effect, and that the growth-related factors such as diminishing returns to new investment explain the lower persistence of accruals (Fairfield et al. 2003).

Fairfield et al. (2003) focused on the role of accrual as a component of Growth in Net Operating Assets (GrNOA), hence disintegrated growth in net operating assets into two, accruals and growth in Long-term Net Operating Assets (GrLNOA). Fairfield et al. (2003) defined accruals as the change in non-cash working capital less depreciation and amortization expense, while defining Growth in Long-term Net Operating Assets (GrLNOA) as a difference between the Growth in Net Operating Assets (GrNOA) and accruals.

After disintegrating Growth in Net Operating Assets (GrNOA) into accruals and Growth in Long-term Net Operating Assets (GrLNOA), such that each of the components had different coefficients, while controlling for the current profitability. Fairfield et al. (2003) empirical results showed that the two components had negative relations with one-year-ahead ROA. Which means that firms with similar profitability in year t , among them firms investing relatively more in net operating assets experience lower profitability in year $t+1$.

Fairfield et al. (2003) argues that the lower persistence of accruals arises because accruals are a component of growth in net operating assets. The lower persistence of accruals is more likely to result from conservative bias in accounting or the rate of

economic profits that result from diminishing returns to new investment opportunities, or both, than from earnings management.

The accounting conservatism and diminishing marginal returns depresses the one-year-ahead ROA on the new investment (Fairfield et al. 2003). Thus, according to the Fairfield et al. (2003), the lower persistence of accruals relative to cash flows documented by Sloan (1996), is a specific manifestation of a more general incremental relation between one-year-ahead ROA and growth in net operating assets.

Therefore, Fairfield et al. (2003) concluded that 'accrual anomaly' documented by Sloan (1996) is a special case of what could be viewed as assets growth anomaly.

Mahedy (2005) find that changes in balance sheet accruals scaled to the size of the balance sheet are powerful indicator of future earnings and stock prices. The results of the Mahedy (2005) research showed that stocks of firms with low balance sheet accrual growth outperformed stocks of firms with high balance sheet accrual growth by 9.3% a year.

Richardson et al. (2005) find statistically negative coefficient on accrual (change in operating assets deflated by lagged net operating assets) after regressing future earnings on current earnings and accruals. Richardson et al. (2005) agreed with earlier researchers (Sloan 1996 and Fairfield et al. 2003) that the accrual component is less persistent than the cash flow component of earnings.

The Richardson et al. (2005) findings concurred with Fairfield et al. (2005) results. However, Richardson et al. (2005) failed to rule out that diminishing returns on increased investment was the cause of lower persistent on accrual component of earnings compared to cash flow component. Richardson et al. (2005) concluded that temporary accounting distortions play a significant role in the lower persistent of accrual component of earnings.

Therefore, from existing literature it clearly shows that there exists correlation between the one-year-ahead ROA and growth in net operating assets, the relationship which this study intends to investigate at NSE.

This study employs financial statement data for five years, beginning 1999 and ending 2004. The firms' financial statements that lack sufficient data to compute accruals and net operating assets are excluded from the study. The financial variables of interest in this study are earnings, accruals and growth in long-term net operating assets. The study entails cross-sectional comparison of magnitude of earnings and relative magnitude of the components of the Growth in Net Operating Assets (GrNOA), that is, accrual (ACC) and Growth in Long-term Net Operating Assets (GrLNOA).

1.2 Population and Sample selection

Population consists of firms listed on NSE, whereas sample consists of firms in non-financial sector with sufficient financial data to compute the variables of study.

1.3 Data Collection

The data that was used in the study is financial data that was obtained from firms' financial statements that covers the period from 1999 to 2004. The financial data was collected from the NSE database and firms' financial statements available at Capital Markets Authority (CMA). The firms without sufficient financial data to compute earnings, accruals, working capital or net operating assets were excluded from the study.

1.4 Definition of variables

The three financial variables in this study, that is, earnings (ROA), accruals and growth in long-term net operating assets are defined as follows:

CHAPTER THREE: METHODOLOGY

3.1 Research Design

This study employs financial statement data for five years, beginning 1999 and ending 2004. The firms' financial statements that lack sufficient data to compute accruals and net operating assets are excluded from the study. The financial variables of interest in this study are earnings, accruals and growth in long-term net operating assets. The study entails cross-sectional comparison of magnitude of earnings and relative magnitude of the components of the Growth in Net Operating Assets (GrNOA), that is, accrual (ACC) and Growth in Long-term Net Operating Assets (GrLNOA).

3.2 Population and Sample selection

Population consists of firms listed on NSE, whereas sample consists of firms in non-financial sector with sufficient financial data to compute the variables of study.

3.3 Data Collection

The data that was used in the study is financial data that was obtained from firms' financial statements that covers the period from 1999 to 2004. The financial data was extracted from the NSE database and firms' financial statements available at Capital Markets Authority (CMA). The firms without sufficient financial data to compute operating income, accruals, working capital or net operating assets were excluded from the study.

3.4 Definition of variables

The three financial variables in this study, that is, earnings (ROA), accruals and growth in long-term net operating assets are defined as follows:

$$a) \text{ Return on Assets (ROA)} = \frac{\text{Operating Income}}{\text{Average total Assets}}$$

Where:

- i. Operating income refers to income after depreciation and amortization, which is from continuing operations. The definition excludes no-recurring items such as extraordinary items, discontinued operations and non-recurring income.
 - ii. Average total assets refers to sum of the total assets at the beginning of the period and total assets at the end of the period divided by two.
- b) In determining accruals we used indirect method on balance sheet variables, and defined accruals as growth (net change) in operating working capital accounts (other than cash and cash equivalent) minus current-period depreciation and amortization expense.

$$ACC_t = GrWC_t - DEPAMORT_t$$

$$GrWC = (NCA_{t+1} - C_{t+1}) - (NCA_{t-1} - C_{t-1})$$

Where:

ACC = Accruals

GrWC = growth (net change) in working capital excluding cash and cash equivalent

DEPAMORT = depreciation and amortization expense

NCA_{t+1} = Net Current asset year t+1

C_{t+1} = Cash and cash equivalent year t+1

NCA_{t-1} = Net Current asset year t-1

C_{t-1} = Cash and cash equivalent year t-1

Net operating assets (NOA) is defined as total operating assets (excluding cash) minus total operating liabilities.

$$NOA_t = TA_t - TL_t$$

Where:

NOA_t = Net Operating Assets

TA = Total Assets

TL = Total Liabilities

Growth in net operating (GrNOA) refers to annual change in net operating assets.

Since accruals (ACC) and growth in long-term net operating assets (GrLTNOA) are the two components that makes up growth in net operating assets (GrNOA), then growth in long-term net operating assets (GrLTNOA) is defined as growth in net operating (GrNOA) assets other than accruals (Fairfield et al. 2003).

$$\text{GrLTNOA}_t = \text{GrNOA}_t - \text{ACC}_t$$

3.5 Model Specification

According to Fairfield et al. (2003) and Richardson et al. (2005) future profitability of a firm, is a function of Growth in Net Operating Assets (GrNOA); hence it can be expressed as follows.

$$\text{ROA}_{t+1} = \alpha_0 + \alpha_1 \text{GrNOA}_t + \alpha_2 \text{ROA}_t + \mu_{t+1}$$

The regression framework was used to find the correlation between growth in Long-term Net Operating Assets (NOA) and future profitability of the companies listed on NSE. Growth in Net operating Assets (GrNOA) can be disintegrated into accrued earnings and growth in long-term net operating assets (Fairfield et al. 2003; Richardson et al. 2005).

The first objective is to determine the nature of relationship between accrued earnings and future profitability (ROA_{t+1}) for the companies listed on NSE. This objective is tested using regression approach by estimating the following model.

$$ROA_{t+1} = \beta_0 + \beta_1 ACC_t + \beta_2 ROA_t \quad (1)$$

The second objective is to determine the nature of relationship between Growth in Long-term Net Operating Assets (GrNOA) and future profitability (ROA_{t+1}) for the companies listed on NSE. Similarly, this second objective is tested using regression approach by estimating the following model.

$$ROA_{t+1} = \alpha_0 + \alpha_1 GrLNOA_t + \alpha_2 ROA_t \quad (2)$$

3.6 Data Analysis

This study builds on Fairfield et al. (2003) model to investigate the two main objectives stated earlier in this paper. To test the objectives regression analysis was applied on panel data for firms listed on NSE over the 5-year period from 1999 to 2004.

The co-efficient of the variables of the two equations in the study as shown in the preceding section were estimated by Ordinary Least Square (OLS) method. The explanatory variables, that is, accruals (ACC_t) and Growth in Long-term Net Operating Assets ($GrLNOA_t$) were regressed against the future profitability (ROA_{t+1}). In the analysis, all the independent variables were regressed on dependent variable to study the effects.

Descriptive statistics measures for one-year-ahead return on assets, current accruals and Growth in Long-term Net Operating Assets for 175 firm-year observations are presented in tabular form. Also presented in tabular form are the correlations among return on assets, accrued earnings and growth in long-term net operating assets.

CHAPTER FOUR: DATA ANALYSIS AND FINDING

4.1 Introduction

The first objective of this study was to determine the nature of relationship between accrued earnings and future profitability (ROA_{t+1}) for the companies listed on NSE. In order to achieve this objective multiple regression analysis was performed to establish the relationship between accrued earnings and future profitability.

The second objective of this study was to determine the nature of relationship between Growth in Long-term Net Operating Assets (GrNOA) and future profitability (ROA_{t+1}) for the companies listed on NSE. Also to achieve this objective multiple regression analysis was performed to establish the relationship between Growth in Long-term Net Operating Assets (GrNOA) and future profitability.

4.2 Descriptive Statistics

Table 2 below presents descriptive statistics on future profitability (ROA_{t+1}), current profitability (ROA_t), accruals, growth in long-term net operating assets, growth in working capital, Depreciation and amortization, and net current assets in previous year and net current assets in the current year.

Table 2: Descriptive Statistics

Variables	Mean	Std. Deviation	Median	Percentiles	
				25	75
ROA_{t+1}	0.07	0.252	0.076	0.002	0.179
ROA_t	0.065	0.247	0.066	-0.006	0.166
ACC_t (Ksh '000')	-105,393.38	1,470,482.872	-37,887	-229,722	35080
$GrLNOA_t$ (Ksh '000')	835,031.484	4,196,959.977	69,687	-37,810.75	382,672.5
$GrWC$ (Ksh '000')	30,507.673	1,415,427.985	4,556	-91,919	94589
$DEPAMORT$ (Ksh '000')	139,898.147	240,646.847	504,23.5	4,212.132	148,650.5
NCA_{t-1} (Ksh '000')	455,800.878	1,318,366.395	182,811	23,852	850,434.25
NCA_t (Ksh '000')	425,220.31	1,250,142.723	160,704	-670	588,471
n (Firm-years)	175	175	175	175	175

Where:

Number of observations, $n = 175$ firm years from 2000 to 2004, 1999 is a base year

ROA_{t+1} = return on assets, defined as operating income after depreciation and amortization at time $t+1$ divided by average total assets at time $t+1$

ROA_t = return on assets, defined as operating income after depreciation and amortization at time t divided by average total assets at time t

ACC_t = accruals, defined as the change in current operating assets minus the growth in working capital minus depreciation and amortization expense at time t

$GrLNOA_t$ = growth in long-term net operating assets, at time t

DEPAMORT = current period depreciation and amortization expense

NCA_{t-1} = Net current assets at time $t-1$

NCA_t = Net current assets at time t

Table 2 shows that the mean of the current return on assets for the sample firms is 6.5 percent. The results indicate that mean accruals are negative (-1,005,393.00) suggesting that accruals on average reduce income (Fairfield et al. 2003; Sloan 1996).

The negative mean accruals also imply that the negative effect of depreciation and amortization expense outweighs the positive growth in working capital (Fairfield et al. 2003).

Result in table 2, also shows that long-term net operating assets are growing more than 27 times faster than working capital.

4.3 Correlations

Table 3 below presents correlation among future profitability (ROA_{t+1}), current profitability (ROA_t), accruals, growth in long-term net operating assets, growth in working capital and Depreciation/amortization expense.

Table 3: Correlations

VARIABLES		ROA _{t+1}	ROA _t	ACC _t	GrLNOA _t	GrWC	DEPAMORT
ROA _{t+1}	Pearson Correlation	1	.312(**)	-0.011	-0.109	-0.005	0.03
	Sig. (2-tailed)	.	0	0.89	0.155	0.944	0.698
ROA _t	Pearson Correlation	.312(**)	1	0.038	-0.141	0.046	0.039
	Sig. (2-tailed)	0	.	0.621	0.066	0.546	0.615
ACC _t	Pearson Correlation	-0.011	0.038	1	-0.043	.987(**)	-.306(**)
	Sig. (2-tailed)	0.89	0.621	.	0.574	0	0
GrLNOA _t	Pearson Correlation	-0.109	-0.141	-0.043	1	-0.03	0.086
	Sig. (2-tailed)	0.155	0.066	0.574	.	0.696	0.269
GrWC	Pearson Correlation	-0.005	0.046	.987(**)	-0.03	1	-.150(*)
	Sig. (2-tailed)	0.944	0.546	0	0.696	.	0.051
DEPAMORT	Pearson Correlation	0.03	0.039	.306(**)	0.086	-.150(*)	1
	Sig. (2-tailed)	0.698	0.615	0	0.269	0.0501	0

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

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

Table 4: Correlations

VARIABLES		GrLNOA _t	NCA _t	NCA _{t-1}
GrLNOA _t	Pearson Correlation	1	.324(**)	-0.131
	Sig. (2-tailed)	.	0	0.089
NCA _t	Pearson Correlation	.324(**)	1	.426(**)
	Sig. (2-tailed)	0	.	0
NCA _{t-1}	Pearson Correlation	-0.131	.426(**)	1
	Sig. (2-tailed)	0.089	0	.

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

Results in table 3 show that there was a significant positive correlation between the future profitability (ROA_{t+1}) and current period profitability (ROA_t).

As shown in table 3 there was a negative correlation that was not significant among future profitability (ROA_{t+1}) and current period accruals, growth in long-term net operating assets and working capital. However, there was positive correlation that was not significant between future profitability (ROA_{t+1}) and depreciation/amortization expense. The results were inconsistent with prior researchers (Fairfield et al. 2003) that found there was a positive significant correlation among future profitability (ROA_{t+1}) and all these variables.

There was non-significant negative correlation among current accruals and growth in long-term net operating assets. However, there was positive non-significant correlation among current accruals and current profitability (ROA_t). Table 3 results also show that there was significant positive correlation between the current accruals and growth in working capital, while there was a significant negative correlation between current accruals and depreciation/amortization expense.

As also shown in table 3 there was correlation non-significant correlation among growth in long-term net operating assets and future profitability (ROA_{t+1}), current profitability (ROA_t), current period accruals, growth in working capital and depreciation and amortization expense. The results were inconsistent with prior researchers (Fairfield et al. 2003) results that indicated significant positive correlation among these variables.

Table 3 result shows that there was no correlation among growth in working capital and other variables, that is, future profitability (ROA_{t+1}), current profitability (ROA_t) and growth in long-term net operating assets. The results are inconsistent with prior researchers (Fairfield et al. 2003) results that indicated positive correlation among these variables. There was only correlation among growth in working capital and the two variables, that is, current accruals and depreciation and amortization expense.

Results in table 4 indicates that there was positive significant correlation among the growth in long-term net operating assets and net current assets for the current period, a component of a growth in working capital. However, there was no correlation between the growth in long-term net operating assets and previous period net current assets another component of a growth in working capital.

4.4.1 Estimation Results of Equation 1

To test the first hypothesis, that is, future profitability is not related to accrued earning. One-year-ahead return on Assets (ROA_{t+1}) was regressed against the current accruals (ACC_t). Table 5 below presents the estimation results of multiple regression of the first equation (model).

Table 5: Estimation results of equation 1 ($ROA_{t+1} = \beta_0 + \beta_1 ACC_t + \beta_2 ROA_t$)

<u>Variables</u>	<u>Estimated Coefficient</u>	<u>t-Statistics</u>	<u>Sig.</u>
Intercept	0.048	2.543	0.012
ACC	-0.022	-0.308	0.758
ROA_t	0.313	4.290	0.000
F-Statistics	9.214		0.000
Adjusted R ²	0.098		
Durbin Watson	2.397		

There is need to note that above estimations in table 5 were made at 5% significance level.

The intercept (β_0) of the first equation as shown in table 5 was 0.048. While the coefficient/slopes (β_1 and β_2) of independent variables, that is, current accrued earnings and current return on assets were -0.022 and 0.313 respectively. The co-efficient of current accruals was negative value as we expected.

The t-Statistics values for the intercept (β_0), current accrued earnings (β_1) and current return on assets (β_2) were 2.543, -0.308 and 4.290 respectively. Whereas, the p-values for

intercept (β_0), current accrued earnings (β_1) and current return on assets (β_2) were 0.012, -0.308 and 0.000 respectively.

The calculated accruals t-statistics value of -0.308 was within the range of -1.960 and +1.960 ($-1.960 < t < 1.960$) from the t-statistics table, which implies that we can be 95 percent confident that current accrued earnings do not serve as explanatory factor for changes in one-year-ahead return on assets. This was inconsistent with prior researchers (Fairfield et al. 2003) who found current accrued earnings had an explanatory factor for changes in one-year-ahead return on assets.

Results in table 5 also show that when one-year-ahead return on assets (dependant variable) was regressed against the current accruals and current return on assets (predictor variables), the co-efficient of determination (R^2) was 0.098. This implies that after controlling for current return on assets, 9.8% of total variation in one-year-ahead return on assets may be predicted by change in the actual value of current accrual amount. Factors other than changes in levels of current accruals account for 90.2%.

As shown in table 5 F-statistics test value of the first equation was 9.214. This calculated F-statistics value of 9.214 was greater than the value from F-statistics tables, $F_{0.05, 2, 172} = 3.00$. This implies that there was a linear relationship between one-year-ahead return on assets (ROA_{t+1}) and at least one of the independent variables, that is, either current accruals or current return on assets.

The Durbin Watson test value of the first equation was 2.39, which is close to 2 implying that the autocorrelation in the model was not a problem.

From the above statistical tests, therefore, we accepted the first hypothesis of this study that, future profitability (ROA_{t+1}) is not related to current accrued earnings. This was because the current accrued earnings does not indicate to be an explanatory factor for changes in future profitability. Secondly, low co-efficient of determination of 0.098 implies a low explanatory power of the model.

4.4.2 Estimation Results of Equation 2

To test the second hypothesis, that is, future profitability is not related to Growth in Long-term Net Operating Assets. One-year-ahead return on Assets (ROA_{t+1}) was regressed against the current Growth in Long-term Net Operating Assets ($GrLNOA_t$). Table 6 below presents the estimation results obtained after regression of the second equation (model).

Table 6: Estimation results of equation 2 ($ROA_{t+1} = \alpha_0 + \alpha_1 GrLNOA_t + \alpha_2 ROA_t$)

<u>Variables</u>	<u>Estimated Coefficient</u>	<u>t-Statistics</u>	<u>Sig.</u>
Intercept	0.055	2.889	0.000
GrLTNOA _t	-0.064	-0.871	0.385
ROA-t	0.318	4.304	0.000
F-Statistics	10.372		0.004
Adjusted R ²	0.109		
Durbin Watson	2.397		

Note that above computations in table 6 were made at 5% significance level.

The intercept (α_0) of the second equation as shown in table 6 results was 0.055. While the coefficient/slopes (α_1 and α_2) of independent variables current Growth in Long-term Net Operating Assets and current return on assets were -0.064 and 0.318 respectively. The coefficient of Growth in Long-term Net Operating Assets was negative value as we expected.

The t-Statistics values for the intercept (α_0), current Growth in Long-term Net Operating Assets (α_1) and current return on assets (α_2) were 2.889, -0.871 and 4.304 respectively. Whereas, the p-values for intercept (α_0), current Growth in Long-term Net Operating Assets (α_1) and current return on assets (α_2) were 0.000, 0.385 and 0.000 respectively.

The calculated t-statistics value of growth in long-term net operating assets coefficient was -0.064, which is within the range of -1.960 and +1.960 ($-1.960 < t < 1.960$) from the t-statistics table. This implies that we can be 95 percent confident that current growth in

long-term net operating assets dose not serve as explanatory factor for changes in one-year-ahead return on assets.

Table 6 results shows that when one-year-ahead return on assets (dependant variable) was regressed against the current Growth in Long-term Net Operating Assets and current return on assets (predictor variables), the co-efficient of determination (R^2) was 0.109. This implies that after controlling for current return on assets, 10.9% of total variation/changes in one-year-ahead return on assets may be predicted by change in the current Growth in Long-term Net Operating Assets. Factors other than changes in levels of current accruals account for 89.1%.

As shown in table 6 the F-statistics test value of the second equation was 10.372. Since calculated F-statistics value of 10.372 is greater than the value from F-statistics tables, $F_{0.05, 2, 172} = 3.00$, then it was interpreted there was a linear relationship between one-year-head return on assets (ROA_{t+1}) and at least one independent variable, that is, either current growth in long-term net operating assets or current return on assets.

Durbin Watson test value was 2.37, and since it was close to 2, it was interpreted that autocorrelation in the second equation (model) was not a problem.

Therefore, from the statistical tests above, we accepted the second hypothesis of this study that future profitability (ROA_{t+1}) is not related to growth in long-term net operating assets. This was because the current growth in long-term net operating assets does not indicate to be an explanatory factor for changes in future profitability. Secondly, low co-efficient of determination of 0.109 implies a low explanatory power of the model.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of findings

This study concludes that, there is a negative relationship between the current accruals and one-year-ahead return on assets. Also there is a negative relationship between current growth in long-term net operating assets and one-year-ahead return on assets. These results are in conformity with Fairfield et al. (2003) findings that, after controlling for the current return on assets both the current accruals and Growth in Long-term Net operating Assets have negative association with one-year-ahead return on assets.

There is a weak relationship between the current accruals and one-year-ahead return on assets. This is shown by the adjusted coefficient of determination for the first equation of 0.098, which means after controlling for current return on assets only 9.8 percent of the change in one-year-ahead return on assets is explained by changes in the current accrued earnings.

Also there is a weak relationship between the Growth in long-term net operating assets and one-year-ahead return on assets. The adjusted coefficient of determination for the second equation of 0.109 means that after controlling for current return on assets, only 10.9 percent of the change in one-year-ahead return on assets is explained by changes in the current growth in long-term net operating assets.

The findings of this study, however, show that the both models (equations) have an explanatory power. The F-Statistics tests in both equations implies that at least one independent variable (current accruals, growth in long-term net operating assets or current return on assets) is linearly related to one-year-ahead return on assets. Also since the Durbin Watson test from both equations of 2.397 is close to 2 then, we conclude that autocorrelation in the models is not a problem.

From the statistical tests in this study we confidently accept the both hypothesis and conclude that: first, there is no relationship between the future profitability and current accrued earnings. Second, there is no relationship between future profitability and growth in long-term net operating assets.

5.2 Limitation of study

Following are some of the limitations of this study which could have influenced the outcome of this study:

- Considering the availability of data and formulation of variable of research, this research is based on companies listed on NSE excluding those in financial sector and all unlisted companies. Therefore, the research results might be different if all the companies in Kenya were included in the study.
- Determination of the variables (accruals, growth in long-term operating assets net and return on assets) of the study depended on companies' financial reports. However, these companies may have adopted different accounting practices in preparation of these financial reports. Hence, this could have affected the results of this research.
- This study used ordinary least square method in data analysis. The regression analysis method has a known limitation, that it cannot determine cause-and-effect relations, which means that correlation does not imply causation.

5.3 Suggestions for Further Research

Future research that relates accrued earnings and future profitability could focus on investigating whether 'accrual anomaly' exists at NSE. This could entail testing whether investors would realize abnormal returns after forming portfolios based on the levels of accruals in the companies listed on NSE.

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Edward Current Ltd

Wuhan Breweries Limited

Yan (P.A) Limited

Yi Qi Company Limited

Yi Sugar Company Limited

Yongwei and Lightbulb (China) Limited

Yongqi Ltd

Yongsheng Limited

Yongsheng & Company Limited

Yongsheng Limited

Yongsheng Limited

Yongsheng Limited

Yongsheng Tea Company Limited

Yongsheng Limited

Yongsheng Company Limited

Yongsheng Tea House Limited

Operating Income (year)

Total Assets (year)

Net Current Assets (year)

Cash and cash equivalents (year)

DEP - Depreciation and amortization expense

Net Operating Assets (year)

Data can be obtained from AIC (http://www.aic.gov.hk) and the annual reports of the companies in Capital Market Authority

APPENDIX 1 - SAMPLE OF DATA COLLECTION FORM

Year t	Ksh."000"					
No. Company Name	OPINC - t	TA - t	NCA - t	C - t	DEPAMORT - t	NOA-t
1 Brooke Bond Kenya Limited						
2 Kakuzi Limited						
3 Rea Vipingo Plantations Ltd						
4 Sasini Tea and Coffee Limited						
5 Car and General (Kenya) Limited						
6 CMC Holdings Limited						
7 Kenya Airways Limited						
8 Marshalls (East Africa) Limited						
9 Nation Media Group Limited						
10 Tourism Promotion Services Limited						
11 Uchumi Supermarket Limited						
12 Athi-River Mining Limited						
13 Bamburi Cement Company Limited						
14 British American Tobacco Kenya Limited						
15 BOC Kenya Limited						
16 Carbacid Investments Limited						
17 Crown-Berger Kenya Limited						
18 East African Cables Limited						
19 East Portland Cement Ltd						
20 East African Breweries Limited						
21 Firestone (E.A) Limited						
22 Kenya Oil Company Limited						
23 Mumias Sugar Company Limited						
24 Kenya Power and Lighting Company Limited						
25 Total Kenya Ltd						
26 Unga Group Limited						
27 A. Bauman & Company Limited						
28 City Trust Limited						
29 Eaagads Limited						
30 Express Kenya Limited						
31 Kapchorua Tea Company Limited						
32 Kenya Orchards Limited						
33 Limuru Tea Company Limited						
34 Standard Newspapers Group Limited						
35 Williamson Tea Kenya Limited						

Where:

OPINC - t = Operating Income year t

TA - t = Total Assets year t

NCA - t = Net Current Assets year t

C - t = Cash and cash equivalent year t

DEPAMORT - t = Depreciation and Ammortization year t

NOA - t = Net Operating Assets year t

The data can be obtained from NSE handbook and firm's financial reports available at Capital Market Authority library.

APPENDIX 2 – COMPANIES LISTED ON THE NAIROBI STOCK EXCHANGE

MAIN INVESTMENTS MARKET SEGMENT

AGRICULTURAL

Unilever Tea (K) Limited

Kakuzi Limited

Rea Vipingo Limited

Sasini Tea and Coffee Limited

INDUSTRIAL AND ALLIED

COMMERCIAL & SERVICES

Car and General Limited

CMC Holdings Limited

Hutchings Biemer Limited

Kenya Airways Limited

Marshalls (East Africa) Limited

Nation Media Group Limited

Tourism Promotions Services Limited

Uchumi Supermarkets Limited

East African Breweries Limited

FINANCE AND INVESTMENT

Barclays Bank of Kenya Limited

CFC Bank Limited.

Diamond Trust Bank of Kenya Limited

Housing Finance Company of Kenya Limited

ICDC Investment Company Limited.

Jubilee Insurance Company Limited

APPENDIX 2 – COMPANIES LISTED ON THE NAIROBI STOCK EXCHANGE

Kenya Commercial Bank Limited

National Bank of Kenya Limited

NIC Bank Limited

Pan Africa Insurance Company Limited

Standard Chartered Bank Limited

Tea Company Limited

INDUSTRIAL AND ALLIED

Athi River Mining Limited

Bamburi Cement Limited

British American Tobacco Kenya Limited.

BOC Kenya Limited

Carbacid Investments Limited

Crown Berger Kenya Limited

Olympia Capital Holdings Limited

East African Cables Limited

East African Portland Cement Company Limited

East African Breweries Limited

Sameer Africa Limited

Kenya Oil Limited

Mumias Sugar Company

Kenya Power and Lighting Company Limited

Total Kenya Limited

Unga Group Limited

APPENDIX 2 – COMPANIES LISTED ON THE NAIROBI STOCK EXCHANGE

ALTERNATIVE INVESTMENTS MARKETS SEGMENT (AIMS)

A. Baumann and Company Limited .

City Trust Limited

Eaagads Limited

Express Kenya Limited

Kapchorua Tea Company Limited

Kenya Orchards Limited

Limuru Tea Company Limited

Standard Newspapers Limited

Williamson Tea Kenya Limited