

**ANALYSIS OF SHARE PRICE DETERMINANTS AT NAIROBI
SECURITIES EXCHANGE**

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**A Research Project Submitted in Partial Fulfillment of the Requirement for the Award
of the Master of Business Administration Degree, School of Business, University of
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DECLARATION

This project is my original work and has not been submitted for a degree award in any other university.

Signed..........

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This project has been submitted for examination with my approval as university supervisor.

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DEDICATION

This project is dedicated to my parents, Rose K. Gatua and Daniel M. Gatua, for their continued love, support and guidance and for all the experiences we have been through together.

ACKNOWLEDGEMENTS

Humanity progresses on the collective acts of individuals.

I give thanks to God for giving me life and graces each day to contribute to His work in the universe.

Special thanks go to Professor Gituro Wainaina for his continued guidance, patience, friendship, unfailing leadership and advice.

To my family for their support and love, I am forever indebted.

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God bless you all.

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ABSTRACT

Macroeconomic variables are a major determinant of the economic wellbeing of any country as they affect many facets such as Gross Domestic Product (GDP), balance of trade and currency interactions. In Kenya, there have been no studies specifically related to the effects of macroeconomic variables on share prices of companies listed at Nairobi Securities Exchange (NSE).

The present study analyses the share price performance of seven firms and seeks to identify the factors that influence share prices for the selected firms in various sectors at NSE by developing a model (s) for share price determination.

Data was collected on the seven variables under study for a period of five years (2008 – 2012) and regression analysis was utilized to determine the effect of selected macroeconomic variables on the share prices of seven companies in seven sectors at NSE and the share prices for the companies were analysed in terms of change in magnitude.

The general results indicate that there is no one model to predict share prices at NSE. Only one company, Equity Bank, had a model that could be used to determine share prices based on the variables under study and this could be explained by the fact that the share prices of Equity Bank had a big differential (of KShs 312.15) with the highest price at KShs 324.00 and the lowest price at KShs 11.85 while the share prices of the other companies under study had small differentials with the biggest differential being KShs 54.25.

The results of the empirical analysis are consistent with most of the findings in the literature review and support the evidence that the selected determinants have little effect on share price. This could have been influenced by the period under study (five years) and maybe with a longer time period the results could be different. This is further evinced by the results of the regression of Equity Bank share prices which had a big differential denoting that in the long run, as prices change, a model could be developed.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

A stock market is where shares or securities are issued and traded through exchanges or over-the-counter markets. It is also known as the equity market and is one of the important areas of a market economy as it provides access to capital to companies, ownership in the company for primary investors and the potential of gains based on the firm's future performance for secondary investors.

Investment in equity shares is one of the major avenues of investment that yields considerable returns to investors. It is also a source of finance for the capital requirements of firms. Returns from such equity investments are subject to vary owing to the movement of share prices, which depend on various factors which could be internal or firm specific such as earnings per share, dividends and book value or external factors such as interest rate, GDP, inflation, government regulations and Foreign Exchange Rate (FOREX). Share price is used as a benchmark to gauge performance of a firm and its variations as an indicator of the economic health or otherwise of a firm hence the need to be conversant with the factors that could adversely affect share prices.

Having knowledge of such factors and their possible impact on share prices is highly appreciable on the part of both firms and investors. Since share prices convey information to the outside world about the current and future performance of firms, it is imperative for the managers of the firms to pay due attention to the factors that influence share prices as this could help them enhance firm value in the market. Consideration of such factors by investors is also warranted while investing their funds since this would aid them in making wise investment decisions and invest in stocks that yield good returns. Most investors are attracted to active counters at the stock exchange as this denotes the everchanging perceptions and dealings on a firm's securities which gives share price greater importance as a measure of stock performance.

In the Vision 2030 policy paper, the capital market is expected to play a key role towards making Kenya a developed country. Part of this growth will be spurred by the listing of private and government owned firms in NSE giving the general populace a chance to own

equity in such firms and participate in their management and profitability. This underscores the need for investors to understand the worth of investing in both the short and long term as well as the investment climate. Capital Markets Authority (CMA), which regulates and supervises NSE, through its investor education campaign has succeeded in increasing the level of participation in the capital markets by proactively engaging in outreach programmes.

Dealing in shares and stocks in Kenya started in the 1920's during colonial times. The market was informal and based on a "gentleman's agreement" as there were no rules and regulations governing such trading. At the time, stock broking was conducted as an incidental business by professionals in other areas such as accountants, auctioneers, lawyers and estate agents. In 1951, an estate agent by the name of Francis Drummond established the first professional stock broking firm. He also approached the then Finance Minister of Kenya, Sir Ernest Vasey and impressed upon him the idea of setting up a stock exchange in East Africa. The two approached London Stock Exchange officials in July of 1953 and the London officials accepted to recognize the setting up of Nairobi Stock Exchange as an overseas stock exchange. In 1954, NSE (now Nairobi Securities Exchange) was constituted as a voluntary association of stockbrokers registered under the Societies Act (NSE Website).

There are four investment market segments at NSE namely; Main Investment Market Segment (MIMS), Alternative Investment Market Segment (AIMS), Fixed Income Securities Market Segment (FISMS) and Growth Enterprise Market Segment (GEMS) each with its own eligibility criteria. The firms discussed in this study have all listed their securities under MIMS. The MIMS is further divided into 10 sectors namely; automobile and accessories; banking; construction and allied; energy and petroleum; insurance; manufacturing and allied; telecommunication and technology; agricultural; commercial and services and investment.

NSE is one of the most vibrant markets in Africa which has attracted investors from all over the world, has grown considerably and notably on February 18, 1994 NSE 20-share index recorded an all-record high of 5,030 points. In 1994 NSE was rated by the International Finance Corporation (IFC) as the best performing emerging market in the world with a return of 179 percent in dollar terms and they echoed this in 2007 when a record six Initial Public Offers (IPOs) and additional offers were conducted between 2006 and 2007 (NSE Website).

The government, with its policy of Kenyanisation of companies adapted after independence, has used it in its privatization of many state corporations and numerous companies have been able to raise capital through IPOs after being listed at NSE. The first time a company sells stock to the public is known as an IPO and marks a milestone in its growth potential through injection of new funds as well as getting new investors who bring in new ideas. 1988 saw the first privatization by the Government of Kenya (GoK), through NSE, of the successful sale of a 20 percent (at KShs 20 per share) government stake in Kenya Commercial Bank (KCB). The sale left the GoK and affiliated institutions retaining 80 percent ownership of the bank (NSE Website). In 1994, the government sold some of its shares (at KShs 10 per share) in National Bank of Kenya (NBK) to the public and had another divestiture in 1996.

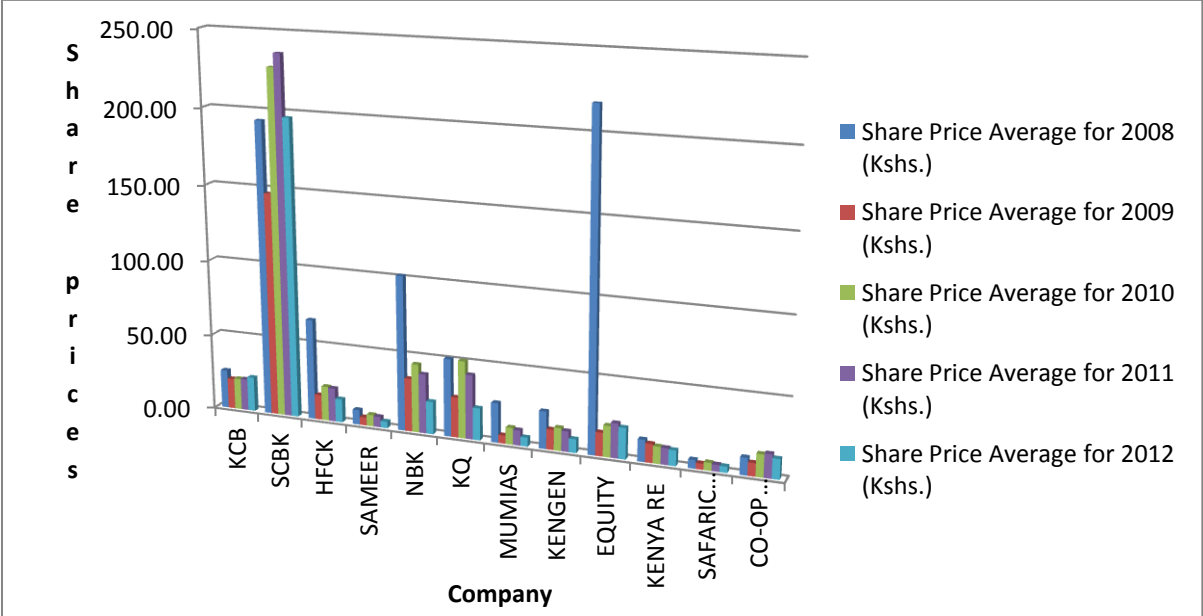
In 1996 the privatization of Kenya Airways (KQ) brought about the largest share issue in the history of NSE at the time. Having sold a 26 percent stake to KLM, the GoK proceeded to offer 235,423,896 shares (51 percent of the fully paid and issued shares of KShs 5.00 each) to the public at KShs 11.25 per share. More than 110,000 shareholders acquired a stake in the airline and the GoK reduced its ownership from 74 percent to 23 percent. The KQ privatization team was awarded the World Bank award for excellence in 1996 for being a model success story in the divestiture of state-owned enterprises (NSE Website).

After almost 10 years, in 2006, there was resurgence in IPOs with Kenya Electricity Generating Company (KenGen) over- exceeding market expectations by being oversubscribed and earning a premium from its first day of trading. This IPO ushered in a new era for NSE with use of the Central Depository and Securities Corporation (CDSC). The CDSC operates a central depository system, provides central clearing, settlement and depository services for securities listed at NSE. After KenGen, the other IPOs were not received with as much enthusiasm until the Safaricom Limited (Safaricom) one (with sale of 10 billion ordinary shares at KShs 5.00 per share and listing of 40 billion ordinary shares) was advertised in 2008 and literally everyone wanted a stake in it. This led to banks and financial institutions coming up with innovative funding mechanisms to capitalise on this demand. This issue was oversubscribed leading to numerous refunds.

In the 20 year period between 1988 and 2008, a number of IPOs have been issued with varying performance. Figure 1 below shows the average share price of 12 companies with an authorized share capital of above KShs 1 billion that have issued an IPO within that period

(NSE)¹. Uchumi Supermarkets Limited has been excluded from this analysis as they were delisted in 2006 and relisted in 2011. This comparison helps bring out further the extent of share price variations amongst firms and the need to understand the factors that influence them.

Figure 1: Comparative Share Prices (2008 – 2012)²



1.2 Statement of the Problem

The performance of the stock market in any country is a strong indicator of general economic performance and is an integral part of the economy of any country. With the introduction of free and open economic policies and advanced technologies, investors are finding easy access to stock markets around the world. The fact that stock market indices have become an indication of the health of the economy of a country indicates the importance of stock markets. This increasing importance of the stock market has motivated the formulation of many theories to describe the working of the stock markets (Gupta, Chevalier & Sayekt, 2008).

Several prior empirical studies (detailed in the literature review) especially from developed economies have shed light on the effect of various factors on the share price of firms but few of these have focused on emerging markets. In addition, findings from these studies indicate that share price determination is very diverse and conflicting. From the basic philosophy

¹ A list of all IPO issues between 1988 and 2008 is provided as Appendix 1.

² Derivative table provided as Appendix 2

(share prices determined by market forces of demand and supply) to the econometric models (share prices determined by a number of economic factors), there are different schools of thought.

Most Kenyan studies have focussed on under-pricing and performance of IPOs such as Ngahu (2006) on book value per share issue price and first trading day prices of IPOs at NSE, Cheluget (2008) on investor's demand for IPOs and first day performance: evidence from NSE, Ndatimama (2008) on performance of IPOs, Leshore (2008) on medium-term performance of IPOs, Simiyu (2008) on pricing and performance of initial public offering: a comparison between state owned enterprises and privately owned enterprises at NSE, Thuo (2009) on the short-run performance of IPOs, Karitie (2010) on long-run performance of IPOs, Wachira (2010) on the determinants of the success of IPOs among listed companies and Kipng'etich et al (2011) on determinants of IPO pricing in Kenya. Due to this lack of sufficient literature to explain contextual features of macro-economic factors, their effects on the share prices at NSE remain largely unexplained necessitating this study.

1.3 Research Objectives

The general objective of this study was to analyse the determinants of share prices at NSE and the specific objectives were to:

- i) Analyse the share price performance of the seven companies
- ii) Develop a model (s) that determines share prices at NSE.

1.4 Value of the Study

CMA and NSE (policy makers); the study findings will be of great benefit in formulation and implementation of policies related to share pricing as well as regulating of stock exchange trading. The government will also be informed on how to make policies, rules and regulations regarding trading rules that will help protect investors so as to encourage investments and spur economic growth.

Firms and individuals (investors); the findings will assist them in understanding the factors that affect share prices and they will be better informed on how to gauge their investment options while banks and other financial institutions will be able to offer better financial advice and products to investors who seek funding to finance share purchases. In addition, scholars

and researchers will find this study useful if they wish to use the findings as a basis for current and further research on the subject.

1.5 Outline of the Project

The first chapter deals with introduction, which includes the background, problem statement, research objectives and importance of the study. The second chapter is a review of previous studies done on the subject, objectives of the studies, results and gaps that have been identified. The third chapter deals with research design and methodology detailing the population, sample, data sources, data collection and method of data analysis. Chapter four details the data analysis and interpretation of the results whereas the fifth and final chapter gives the summary, conclusion, recommendations and limitations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The theoretical relationship between stock market prices and economic variables dates back to Ross (1976), whose Arbitrage Pricing Theory (APT) relates stock market returns to economic variables which are sources of income volatility. The impact of these economic variables on stock market returns is dependent on underlying model assumptions. The APT model was developed as an alternative to the Capital Asset Pricing Model (CAPM) developed by Sharpe (1964) which had unrealistic assumptions and empirical shortcomings as it considers only the linear relationship between two independent variables (risk-free return and volatility of the risk-free return to market return) and the asset price as a dependent variable. The APT model was considered advantageous as it employed a multi-variable model that was expected to have more explanatory power because it allowed for more than one factor (Eita, 2011).

The issue of causality between macroeconomic variables and share returns over the years has stemmed up controversies among researchers based on varying findings. Theoretically, macroeconomic variables are expected to affect returns on equities. But over the years, the observed pattern of the influence of macroeconomic variables (in signs and magnitude) on share returns varies from one study to another in different capital markets (Maku & Atanda, 2010).

2.2 Theoretical and Empirical Literature

An overview of studies using macroeconomic factor models is presented in this section. The findings of the literature suggest that there is significant (positive and negative) linkage between various macroeconomic indicators and share prices in the countries reviewed. Previous local studies have focused predominantly on the under-pricing phenomenon (the pricing of an IPO below its market value) of IPOs. These Kenyan studies concluded that the majority of IPOs perform better in the short term due to under-pricing (which is at over 40.28 percent in Kenya) (Cheluget, J. K., 2008). This is significant in so far as the initial price sets the tone on subsequent share prices and fluctuations.

Aduda, Masila & Onsongo (2012) sought to investigate the determinants of development of NSE. The study employed secondary data (2005 to 2009) to model the impact of

macroeconomic and institutional factors on the development of NSE. The macroeconomic factors included income level, savings and investment, stock market liquidity, macroeconomic stability and private capital flows. Institutional factors included political risk, bureaucratic quality, law and order, corruption and democratic accountability. Using regression analysis, it was found that stock market development was determined by stock market liquidity, institutional quality, income per capita, domestic savings and bank development while macroeconomic stability (proxied by inflation) and private capital flows were found to have no relationship with stock market development. Further, research is needed to establish whether macroeconomic instability and foreign private capital flow affect stock market development. Also, behavioural factors could be considered in development of stock markets as well as comparison of different factors affecting stock market growth in the East African Community countries.

Buigut, Soi, Koskei & Kibet (2013) on their study on the relationship between capital structure and share prices in NSE assessed the effect of debt, equity and gearing ratio on share price. Using panel data pertaining to the energy sector over the period 2006 to 2011 and employing multiple regression analysis, the results indicated that debt, equity and gearing ratio were significant determinants of share prices for the sector under consideration. Further, gearing ratio and debt were found to positively affect share prices while equity negatively affected share prices.

Kipngetich, Kibet, Guyo & Kipkoskey (2011) investigated determinants of IPO pricing in Kenya. They explored the extent to which investor sentiment, post-IPO ownership retention, firm size, board prestige and age of the firm affect IPO pricing of firms listed at NSE. Secondary data (1st January 1994 to 31st December 2008) was used and analysed using multiple regression analysis and presented using descriptive statistics. Average under-pricing of 49.44 percent was observed in Kenyan IPOs for the period under study and all the variables tested were found not to significantly influence IPO offer price at the 5 percent level of significance. The study concluded that public information disclosed in the prospectus was insignificantly mirrored in IPO offer prices and that rational theory cannot explain the effect of investor sentiment in IPO market in Kenya given that investor sentiment and board prestige were negatively related to IPO offer price. Further research is needed on the role of regulatory authorities, especially as regards disclosure requirements, in protecting potential investors as

the publicly available information provided in the prospectus may not reflect all pertinent facts to inform sound investment decisions.

Waweru (2010) sought to establish if there exists a relationship between stock prices and news of an IPO at NSE. Secondary data (2004 to 2009) was obtained and analysed using the Comparison Period Return Approach (CPRA). The mean portfolio daily return was calculated for the IPO within the window period. The study found that issuing of IPOs at NSE had both positive and negative effects on daily mean returns. Negative effects (declining mean daily returns) were on the days nearing the IPOs event which were the result of buyer and seller expectation in the market so as to capitalise on the new issue while positive effects (normalcy is restored) were in the days after the IPOs event which were the result of buyer-seller initiated trading. Further research could be carried out on whether other factors combined with the announcement of an IPO could affect share prices and also the effect of stock splits on share prices.

Labidi & Triki (2011) sought to find out if there were anomalous patterns, namely underpricing and long-run under-performance, in the stock price behaviour of companies that go public in the Middle East and North Africa (MENA) region and the impact of investors' optimism and divergence of opinions on IPO underpricing and long-term under-performance. Data was collected (1st January 2000 to 30th June 2010) for 159 companies in 10 countries and Ordinary Least Squares (OLS) method was used to estimate linear regressions where the dependent variables were IPO initial return (also referred to as underpricing) and IPO 1-year excess return measuring the post-IPO stock price performance. The explanatory variables included size, age and percentage of shares offered as well as proxies of investors' optimism (over-subscription and pre-IPO market return) and divergence of opinion (excess early market return volatility). The study found out that initial IPO returns were highly related to over-subscription levels and listing lags hence contradicting the idea of voluntary underpricing. Also, IPOs with higher early market return volatility had significant lower long-term performance one year after issuance hence supporting the idea that investors' divergence in opinions represented a plausible explanation for long-term under-performance in MENA region. Another important implication of this research was the answer it provided to the widely discussed questions of 'who leaves money on the table?' and 'why do issuers accept to leave money on the table?' (Loughran and Ritter, 2002) and (Derrien, 2005). While voluntary underpricing will result in an opportunity cost for the firm in terms of foregone proceeds

from IPO, high initial returns due to investors' bullishness and / or divergence in opinions indicate that investors are paying excessive prices for IPO shares on the after-market. Further research could be carried out to determine if these findings hold true at all times in MENA and other regions or they could vary depending on other factors such as financial turmoil.

Olowoniyi & Ojenike (2012) investigated the determinants of stock returns of listed firms in Nigeria. Panel econometric approach was used to analyse panel data (2000 to 2009) obtained from 70 listed firms. The Fixed Effect, Random Effect and Hausman-test based on the difference between fixed and random effects estimators were conducted. Stock return (dependent variable) was measured by dividend layout, expected growth was measured by capital expenditure divided by total assets, size was proxied by logarithm of firms' total assets, profitability was proxied by ratio of earnings before interest, tax and depreciation on total assets, tangibility was measured by total fixed assets divided by net profit after tax while leverage was measured by ratio of book value of total debt to total assets. The findings suggested that with the exception of profitability and tangibility (which were significantly and negatively related to stock return), all the independent variables were positively and significantly related to stock return. The findings of this research implied a need to further assess how tangibility and profitability can be improved upon to raise the level of stock return. This will ensure the correctness of several policies formulated to stabilise the financial base of firms based on either capital structure or stock return.

Uwuigbe, Olusegun & Godswill (2012) examined the determinants of share prices in the Nigerian stock exchange market. Using the judgemental sampling technique, a total of 30 companies were selected and data (2006 to 2010) collected from the stock exchange and annual reports of the firms. The paper modelled the effects of financial performance, dividend payout and financial leverage on share price of listed firms by using regression analysis. The study concluded that financial performance and dividend payout had a significant positive relation with share prices while financial leverage (proxied by debt-equity ratio) had significant negative influence on the market value of share prices in Nigeria. Further studies could be conducted incorporating the independent variables under current analysis as well as having other internal and external variables.

Aliyu (2009) examined the long run and short run interactions between stock prices and exchange rate in Nigeria using data from 1st February 2001 to 31st December 2008 and

concluded that causality tests revealed strong evidence of long run bi-directional relationship between stock prices and exchange rates. These results were echoed by Maku & Atanda (2010) whose study was a critical examination of the long run macro-economic determinants of stock market performance in Nigeria between 1984 and 2007. The time series variables were examined using the Augmented Dickey-Fuller (ADF) unit root test and the Augmented Engle-Granger Cointegration (AEGC) test results which revealed that stock market performance in Nigeria was mainly determined by exchange rate, consumer price index (a measure of inflation), broad money supply and real output.

Eita (2011) in investigating the macroeconomic determinants of stock market prices in Namibia used an estimation equation using time series properties of variables and concluded that stock market prices in Namibia were determined by economic activity, interest rates, inflation, money supply and exchange rates. The period under study was 1998 to 2009 and two measures of stock market development were used namely; market capitalisation to GDP and the Namibian stock exchange overall index. A positive relationship existed between stock prices on one hand and money supply and economic activity on the other hand while inflation and interest rates had a negative relationship with stock prices. More information is needed on the effect of exchange rates on the stock prices.

Sharma (2011) undertook to examine the empirical relationship between equity share prices and the explanatory variables; Book Value Per (BVP) share, Dividend Per Share (DPS), Earnings Per Share (EPS), price earning ratio, dividend yield, dividend payout, size in terms of sale and net worth for the period 1993 to 1994 and 2008 to 2009 in India. Using correlation and a linear multiple regression model the results revealed that EPS, DPS and BVP had significant impact on the market price of shares with the former two being the strongest determinants. This was echoed by Nirmala et al (2011) when they conducted a study on the determinants of share prices in India wherein share price was modeled as a function of firm specific variables; dividend, profitability, price-earning ratio and leverage for the period 2000 to 2009. Following the panel unit root, panel cointegration, correlation and OLS tests the results revealed that dividend, price-earning ratio and leverage are significant determinants of share prices for all sectors under consideration where dividend and price-earning ratio bear a positive relation to share price while leverage bears a negative relation. Profitability was found to be positively related to share prices in the auto sector alone.

Limento & Djuariah (2013) set out to discuss the correlation between Ratio Analysis and macroeconomic indicators with stock price in nine publicly listed transport companies in Indonesia for the period 2005 to 2011. The ratio indicators included Return On Assets (ROA), Return On Equity (ROE), Net Profit Margin (NPM), Debt-Equity Ratio (DER), Total Asset Turnover (TAT), Current Ratio (CR), Price Book Value (PBV) and Earnings Per Share (EPS). Macroeconomic indicators used were inflation, GDP and Risk Free Rate (SBI). The regression result showed that ROA, ROE, NPM, CR, DER, PBV, Inflation, SBI and GDP have insignificant correlation with stock price movement while TAT and EPS have a significant correlation with shareprice.

Gupta, Alain & Fran (2008) examined the relationship between the interest rate, exchange rate and stock price in the Jakarta stock exchange for the period 1993 to 1997 which was divided into three sub periods (January 1993 to March 1995, April 1995 to July 1997 and August 1997 to December 1997). Depending on the sub periods being considered, sporadic unidirectional causality from closing stock prices to interest rates and vice versa and weak unidirectional causality from exchange rate to stock price were found. The overall evidence, however, failed to establish any consistent causality relationships between any of the economic variables under study concluding that the Jakarta market efficiently incorporated much of the interest rate and exchange rate information in its price changes at closing stock market index but cautioned that many other dimensions have to be studied before arriving at any definite conclusion about the efficiency. Areas for further research were identified as carrying out the same research for a longer time period and using other multivariate statistical forecasting models other than Autoregressive Integrated Moving Average (ARIMA) and Granger and need to conduct research on causality between select sectoral indices as different sectors may react differently to interest and exchange rates and further research using non-linear relationships between the variables.

2.3 Summary

Different theories have been extensively discussed and tested to date but there is no consensus from both the theoretical and empirical literature on the determinants of share prices and different markets behave differently depending on the variables tested. Factors affecting asset prices are numerous and inexhaustible. The factors can be categorized into firm, industry, country, international, market or non-market factors, economic or non-economic factors. All these factors can be summarised into two-classes; micro- and macro-economic factors. The

extent of factors could help explain why studies applying different variables (though some of the variables may be the same) come up with differing and sometimes opposing views on share price determinants.

Against the background that macroeconomic variables have had different effects or impacts on share prices over the years, a lot of questions arise among which is; is there a relationship between key macroeconomic variables and stock market prices at NSE? The aim of this study was to answer this question covering the period June 2008 to December 2012.

Table 1: Summary of Literature Review

Study	Objectives	Methodology	Findings	Research Gap
Determinants of Stock Market Development: The Case for the Nairobi Stock Exchange. Aduda, Masila and Onsongo (2012).	Investigate the determinants of development in NSE.	Regression analysis	Macro-economic factors such as stock market liquidity, institutional quality, income per capita, domestic savings and bank development were important determinants of stock market development in NSE while no relationship exists between stock market development and macro-economic stability (inflation) and private capital flows.	Do macro-economic instability and foreign private capital flow affect stock market development? What is the effect of behavioural factors on stock market development? Comparison of different factors affecting stock market growth in East Africa.
The Effect of Capital Structure on Share Price of Listed Firms in Kenya. A Case of Energy Listed Firms. Buigut, Soi, Koskei and Kibet (2013).	Investigate the relationship between capital structure and share prices in NSE.	Multiple regression analysis	Gearing ratio and debt positively affect share prices while equity negatively affect share prices.	Extension of the study to other sectors and an increase of the variables under consideration.

Study	Objectives	Methodology	Findings	Research Gap
Determinants of Initial Public Offer Pricing in Kenya. Kipngetich, Kibet, Guyo and Kipkoskey (2011).	Determine the extent to which investor sentiment, post IPO ownership retention, firm size, board prestige and age of the firm affect IPO pricing of firms listed at NSE.	Regression analysis	Average under-pricing of 49.44 percent was observed while the variables tested were found not to significantly influence the IPO offer price at the 5 percent significance level thereby concluding that information disclosed in the prospectus was insignificantly mirrored in IPO offer prices.	The role of regulatory authorities needs to be explored especially as regards disclosure requirements so as to protect investors.
Reaction of Share Prices to Issue of IPOs from the NSE: Empirical Evidence. Waweru (2010).	Is there a relationship between stock prices and news of an IPO at NSE?	CPRA	Declining mean daily returns were observed as IPO event drew near due to buyer and seller expectations while normalcy was restored in the days after IPO due to buyer-seller initiated trading.	Do other factors combined with the announcement of an IPO affect share prices?, What is the effect of stock splits on share prices?

Study	Objectives	Methodology	Findings	Research Gap
Determinants of IPO Pricing and Long-Term Performance in the MENA Region. Labidi and Triki (2011).	Are there anomalous patterns, namely under-pricing and long-run under-performance in the stock price behaviour of companies that go public in MENA region? What is the impact of investors' optimism and divergence of opinions in IPO under-pricing and long-term performance?	Regression analysis	Initial IPO returns were highly related to over-subscription levels and listing lags hence contradicting the idea of voluntary under-pricing. The IPOs with higher market return volatility had significant lower long-term performance one year after issuance hence supporting the idea that divergence in opinions represented a plausible explanation for long-term under-performance in MENA region.	Do these findings hold true at all times in MENA and other regions or could they vary depending on other factors such as financial instability?
Determinants of Stock Returns of Nigerian Listed Firms. Olowoniyi and Ojenike (2012).	The effect of dividend layout, expected growth, firm size, profitability and tangibility on stock prices.	Panel econometric analysis	With the exception of profitability and tangibility (which were significantly and negatively related to stock return), all the included independent variables (dividend layout, expected growth and firm size) were significantly and positively related to stock return.	How can tangibility and profitability be improved to raise the level of stock return?

Study	Objectives	Methodology	Findings	Research Gap
An Assessment of the Determinants of Share Price in Nigeria: A Study of Selected Listed Firms. Uwuigbe, Olusegun and Godswill (2012).	Effects of financial performance, dividend payout and financial leverage on the share price of firms operating in the Nigerian stock exchange market.	Regression analysis	Financial performance and dividend payout had significant positive relation with share prices while financial leverage had significant negative influence on the market value of share prices in Nigeria.	Need to incorporate both internal and external variables to gauge their cumulative and singular effect on share prices.
Stock Prices and Exchange Rate Interactions in Nigeria: An Intraglobal Financial Crisis Maiden Investigation. Aliyu (2009).	Examination of the long run and short run interactions between stock prices and exchange rate in Nigeria.	Cointegration, Granger causality tests and regression analysis	There was strong evidence of long run bi-directional relationship between stock prices and exchange rates.	Investigation of other factors beside exchange rate that affect stock prices.
Determinants of Stock Market Prices in Namibia. Eita (2011).	Investigating the macro-economic determinants of stock market prices in Namibia.	Regression analysis	In Namibia a positive relationship was found between stock prices on one hand and money supply and economic activity on the other while inflation and interest rates had a negative relationship with stock prices.	Investigation of the reasons for negative effects of inflation and exchange rates on stock prices.

Study	Objectives	Methodology	Findings	Research Gap
<p>Determinants of Equity Share Prices in India. Sharma (2011).</p>	<p>Examine the empirical relationship between equity share prices and the explanatory variables; book value per share, dividend per share, earning per share, price earning ratio, dividend yield, dividend payout, size in terms of sale and net worth.</p>	<p>Regression analysis</p>	<p>Earnings per share, dividend per share and book value per share had a significant impact on the market price of shares with the former two being the strongest determinants.</p>	<p>Study of correlation of the variables and possible effects on the factors found not to have significant effect on share prices.</p>
<p>The Determinant of the Stock Price in Indonesian Publicly Listed Transportation Industry. Limento and Djuaeriah (2013).</p>	<p>Discuss the correlation between ratio analysis and macro-economic indicators with stock price in nine publicly listed companies.</p>	<p>Regression analysis</p>	<p>Return on assets, Return on equity, net profit margin, current ratio, debt-equity ratio, price book value, inflation, risk free rate and GDP had insignificant correlation with stock price movement while total asset turnover and earnings per share had significant correlation with share price.</p>	<p>Do these results hold true for other sectors or with a wider sample of firms?</p>

Study	Objectives	Methodology	Findings	Research Gap
The Causality Between Interest Rate, Exchange Rate and Stock Price in Emerging Markets: The Case of the Jakarta Stock Exchange. Gupta, Chevalier and Sayekt (2008).	Examine the relationship between interest rate, exchange rate and stock price in the Jakarta stock exchange.	ARIMA and Granger	There was no consistent causality relationships between any of the economic variables under study concluding that the Jakarta market efficiently incorporated much of the interest rate and exchange rate information in its price changes at closing stock market index but cautioned that many other dimensions had to be studied before arriving at any definite conclusion about efficiency.	Study on other determinants of stock market efficiency.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter outlines the research method used in order to achieve the objectives outlined in Chapter One. Specifically, it describes the research design, population of the study, sampling design, data collection, data analysis and methodology employed.

3.2 Research Design

Descriptive and longitudinal design was employed with a view to making statistical inferences about NSE. Descriptive research design was used to obtain information that describes what exists with respect to the variables tested while the longitudinal design helped track changes over time and relate them to the variables to explain why the changes occur which address the objectives of this study. The macroeconomic variables considered were Share Price (SP), Central Bank of Kenya (CBK) lending / Interest Rate (IR), Foreign Exchange Rate (FOREX), Equity Turnover (ET), NSE 20-share index (NSI), NSE all-share index (NASI) and lagged Share Price (SP).

3.3 Population and Sampling

Using the judgmental sampling technique, a sampling frame of 12 companies listed at NSE was established with the discriminating criterion being that they have an authorised share capital of over KShs 1 billion and have offered IPOs within the period 1988 to 2008. They represented 21.43 percent of the total population (56 listed companies at the stock exchange excluding the three that have been suspended³) which is consistent with the propositions of Krejcie & Morgan (1970) where a minimum of 5 percent of a defined population is considered as an appropriate sample size for making generalizations.

Seven firms were then selected from the sampling frame for the analysis and as representative of the different sectors. Safaricom (telecommunications and technology sector) was selected based on its impact in the market since it was listed, Equity Bank (banking sector) was selected as a representative of the banking sector due to its impact in the economy and wide reach. Equity Bank has over 5.7 million client accounts, accounting for over 57 percent of all bank accounts in Kenya and is the largest bank in Kenya and East Africa in terms of total

³ A list of NSE listed companies by sector is provided as Appendix 3.

capital, number of clients / customers and market capitalization (Super Brands East Africa and the Nairobi Online Business Directory, 2010). KenGen (energy and petroleum sector), KQ (commercial and services sector), Kenya Reinsurance Corporation Limited (insurance sector), Mumias Sugar Company Limited (manufacturing and allied sector) and Sameer Africa Limited (automobile and accessories sector) were selected by being the only ones in their respective sectors amongst the original 12 listed companies considered for the study.

3.4 Data Collection

The study relied on secondary data collected from the NSE, the CMA, the CBK, annual reports of the firms, data from Kenya National Bureau of Statistics (KNBS) and other research material on share prices and macroeconomic variables. The primary time series data source covered the period June 2008 to December 2012 daily data (using five working days a week). Data validity and reliability was ensured by collecting information only from the source to ensure accuracy as a basis for generalizations.

3.5 Data Analysis

Regression analysis was used to determine the relationship between the dependent and independent variables while the magnitude of change in share prices for the companies was analysed. The model used to determine the association between the dependent and independent variables was:

$SP_t = f(IR_t, FOREX_t, ET_t, NSI_t, NASI_t, SP_{t-1}, \epsilon_t)$ written in its explicit form as:

$$SP_{it} = \alpha_0 + \alpha_1 IR_t + \alpha_2 FOREX_t + \alpha_3 ET_t + \alpha_4 NSI_t + \alpha_5 NASI_t + \alpha_6 SP_{i(t-1)} + \epsilon_t$$

where:

SP_{it} = Share price of stock i at time t

IR_t = Interest rate at time t

$FOREX_t$ = Foreign exchange rate at time t

ET_t = Equity turnover at time t

NSI_t = NSE 20-share index at time t

$NASI_t$ = NSE all-share index at time t

SP_{t-1} = Lagged share price of stock i at time t

ϵ_t = Stochastic or disturbance/error term.

t = Time dimension of the variables

α_0 = Constant or intercept.

α_{1-6} = Coefficients to be estimated or the coefficients of slope parameters.

Table 2: Variables Used in the Study

Variable	Type	Unit	Source	Calculation
Share Price	Dependent	Kenya Shilling	NSE	Share price each day
Interest Rate	Independent	Percentage	CBK	Daily rate
Foreign Exchange Rate	Independent	Kenya Shilling	CBK	Daily rate
Equity Turnover	Independent	Kenya Shilling	NSE	Daily turnover
NSE 20-Share Index	Independent	Points	NSE	Daily points
NSE All-Share Index	Independent	Points	NSE	Daily points
Lagges Share Price	Independent	Kenya Shilling	NSE	Share price of previous day

Table 3: Summary of Research Design and Methodology

Objective	Data	Purpose	Analysis	Display
Analyse the share price performance of the seven companies under study	Share prices	Form the basis for data analysis and interpretation	Descriptive	Table
Develop a model (s) that determines share prices at NSE.	Share prices and macroeconomic variables	Identify factors that influence share prices at NSE	Regression equation for inferential purposes	Graphics

CHAPTER FOUR

DATA ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter deals with data analysis and interpretation of results from the regression analysis done as well as the results of analysis of the share prices. Regression was conducted on the data from seven companies for the same time period. The share prices of each company were regressed against the six independent variables in order to determine the various models.

4.2 Analysis of Share Price Performance

The data collected was for the period June 2008 to December 2012 on seven variables. Share price is the dependent variable while IR, FOREX, ET, NSI, NASI and lagged SP were the independent variables. A general analysis of the share prices indicated that they did not deviate highly from IPO issue price with the exception of Equity Bank, KQ and Sameer (with the latter two not having large variances) as depicted in the Table 4 below denoting that the original share price sets the pace of the traded share price in the period under study.

Table 4: Share Price Performance of Seven Companies

Company	Issue Price (KShs)	Lowest Share Price (KShs)	Highest Share Price (KShs)	Differential (High – Low Price) (KShs)
Equity Bank	70.00	11.85	324	312.15
KenGen	11.90	7.15	26.50	19.35
Kenya Airways	11.25	10.25	64.50	54.25
Kenya Reinsurance	9.50	5.25	27.25	22.00
Mumias Sugar	6.25	3.25	14.95	11.70
Safaricom	5.00	2.55	9.65	7.10
Sameer	33.50	3.45	11.10	7.65

Equity Bank commenced business on registration in 1984. It has evolved from a Building Society, a Microfinance Institution, to now the all inclusive NSE and Uganda Securities Exchange (USE) public listed commercial bank. With over 5.7 million accounts, accounting for over 57% of all bank accounts in Kenya, Equity Bank is the largest bank in the region in terms of customer base and operates in Kenya, Uganda and Southern Sudan.

The predicted model from Table 7 below was: $SP = -305.244 + 3.295IR + 2.297FOREX + 0.00000001895ET - 0.00007261NSI + 1.627NASI + 0.167SP_{t-1}$. The R-Square, the coefficient of determination, is an overall measure of the strength of association between the dependent and independent variables. In this case 5.6 percent, as shown in Table 5 below, of the variance in share price can be predicted from the independent variables, indicating that other factors account for 94.4 percent of share price changes. The overall p value (Table 6 below) was less than 0.05 (0.000) and it was deduced that the group of independent variables when used together reliably predicted the dependent variable therefore showed a significant statistical relationship. This however did not address the ability of any of the particular independent variables to predict the dependent variable. The ability of each individual independent variable to predict the dependent variable was addressed below based on the model coefficients in Table 7 below. For independent variables which were not statistically significant, their coefficients were not significantly different from zero and were therefore removed from the equation.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.237 ^a	0.056	0.051	156.41969

Table 6: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1655670.682	6	275945.114	11.28	.000 ^a
	Residual	27794648.56	1136	24467.12		
	Total	29450319.25	1142			

Table 7: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
		B	Std. Error	Beta		
1	(Constant)	-305.244	91.655		-3.33	0.001
	IR	3.295	1.293	0.085	2.548	0.011
	FOREX	2.297	0.813	0.094	2.824	0.005
	ET	0.00000001895	0.000	0.03	0.903	0.367
	NSI	-0.00007261	0.000	-0.006	-0.019	0.849
	NASI	1.627	0.432	0.14	3.762	0
	LAGGED SP	0.167	0.029	0.167	5.717	0

The constant was statistically significant as its coefficient was different from zero and its p value was less than 0.05 (0.00). For the IR, the coefficient (parameter estimate) was 3.295 so,

for every percent increase in IR, a 3.295 shilling increase in share price was predicted, holding all other variables constant. This variable was statistically significant since the p value is less than 0.05 (0.01). For every shilling increase in FOREX, there was a 2.297 shilling increase in the predicted share price, holding all other variables constant. This variable was statistically significant since the p value was less than 0.05 (0.01). As for ET, every shilling increase caused a 1.895E-8 shilling increase in predicted share price, holding all other variables constant. This variable coefficient was not statistically significantly different from zero and its p value was more than 0.05 (0.37) hence did not significantly predict share price and was removed from the predictor model. For every point increase in NSI, there was a 7.261E-5 shilling decrease in the predicted share price, holding all other variables constant. This variable coefficient was not statistically significantly different from zero and its p value was greater than 0.05 (0.85) hence did not significantly predict share price and was removed from the predictor model. As for NASI, a point increase caused a 1.627 shilling increase in the share price, holding all other variables constant. This was statistically significant with a p value of less than 0.05 (0.00) and was kept in the model. For lagged SP, every shilling increase resulted in a .167 shilling increase in the share price, holding all other variables constant. This was statistically significant and the p value is less than 0.05 (0.00). Based on the above explanations, the predictor model for Equity Bank was therefore rewritten as $SP = -305.244 + 3.295IR + 2.297FOREX + 1.627NASI + 0.167SP_{t-1}$ meaning that

$$\begin{matrix} (0.001) & (0.011) & (0.005) & (0.000) & (0.000) \end{matrix}$$

the share price is dependent on IR, FOREX, NASI and lagged SP.

Kenya Airways was founded in 1977 and is the flag carrier (national airline) of Kenya. It is currently a public-private partnership and was listed at NSE in 1996. The company's profitability has fluctuated over the years with losses recorded in some years.

The predicted model from Table 10 below was: $SP = 589.410 - 8.152IR - 2.704FOREX - 0.000000005902ET - 0.00007298NSI - 2.849NASI - 0.005SP_{t-1}$. The R-Square (Table 8 below) showed that 0.3 percent of the variance in share price was predicted from the independent variables. The overall p value (Table 9 below) was more than 0.05 (0.759) and it was deduced that the group of independent variables when used together did not reliably predict the dependent variable therefore showing no significant statistical relationship. The ability of each individual independent variable to predict the dependent variable is addressed below based on the model coefficients in Table 10 below.

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.054 ^a	0.003	-0.002	719.02002

Table 9: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1751678.958	6	291946.493	0.565	.759 ^a
	Residual	588300000	1138	516989.783		
	Total	590100000	1144			

Table 10: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
		B	Std. Error	Beta		
1	(Constant)	589.41	418.871		1.407	0.16
	IR	-8.152	5.922	-0.047	-1.377	0.169
	FOREX	-2.704	3.719	-0.025	-0.727	0.467
	ET	-0.000000005902	0	-0.002	-0.061	0.951
	NSI	-0.00007298	0.002	0.001	-0.042	0.967
	NASI	-2.849	1.975	-0.055	-1.443	0.149
	LAGGED SP	-0.005	0.03	-0.005	-0.154	0.878

Every percent increase in IR resulted in a 8.152 shilling decrease in share price, ceteris paribus. The p value was greater than 0.05 (0.17) hence this variable was not statistically significant as a predictor of share price. As for FOREX, every shilling increase resulted in a 2.704 shilling decrease in the predicted share price, ceteris paribus. The p value was greater than 0.05 (0.47) hence this variable was not statistically significant as a predictor of share price. A shilling increase in ET resulted in a 5.902E-9 shilling decrease in share price, ceteris paribus. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.95) hence this variable was not statistically significant. A similar trend was noted for NSI where every point increase resulted in a 7.298E-5 shilling decrease in the predicted share price, ceteris paribus. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.97) hence this variable was not statistically significant. Every point increase in NASI led to a 2.849 shilling decrease in the share price predicted, ceteris paribus. The p value was greater than 0.05 (0.15) hence this variable was not statistically significant as a predictor of share price. For lagged SP, every shilling increase resulted in a 0.005 shilling decrease in the predicted share price, ceteris paribus. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.88) hence this variable was not statistically significant. From the foregoing explanations all

variables had a negative relationship with the share price and it was concluded that KQ share prices were not predicted by any of the assumed variables.

Kenya Electricity Generating Company was founded in 1998 as a state owned firm and is the largest power producing company in Kenya accounting for 80% of the electricity consumed in the country. It was listed in NSE in 2006.

The predicted model from Table 13 below was: $SP = 0.545 - 0.412IR + 0.101FOREX + 0.000000000486ET - 0.00000598NSI + 0.115NASI - 0.004SP_{t-1}$. The R-Square on Table 11 below shows that 0.8 percent of the variance in share price was predicted from the independent variables. The overall p value (Table 12 below) was more than 0.05 (0.191) and it was deduced that the group of independent variables, when used together did not reliably predict the dependent variable therefore showing no significant statistical relationship. The ability of each individual independent variable to predict the dependent variable is addressed below based on the model coefficients in Table 13 below.

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.087 ^a	0.008	0.002	31.47988

Table 12: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8648.522	6	1441.42	1.46	.191 ^a
	Residual	1127738.375	1138	990.983		
	Total	1136386.897	1144			

Table 13: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.545	18.326		0.03	0.976
	IR	-0.412	0.259	-0.054	-1.592	0.112
	FOREX	0.101	0.163	0.021	0.618	0.537
	ET	0.000000000486	0	0.004	0.115	0.908
	NSI	-0.00000598	0	-0.002	-0.078	0.938
	NASI	0.115	0.086	0.051	1.333	0.183
	LAGGED SP	-0.004	0.03	-0.004	-0.143	0.886

The constant was statistically significant as its coefficient was different from zero and its p value less than 0.05 (0.03). For every percent increase in IT, a 0.412 shilling decrease in share

price was predicted, *ceteris paribus*. The p value is greater than 0.05 (0.11) hence this variable was not statistically significant as a predictor of share price. Every shilling increase in FOREX, caused a 0.101 shilling increase in the predicted share price, *ceteris paribus*. The p value was greater than 0.05 (0.54) this variable was not statistically significant as a predictor of share price. As for ET, every shilling increase caused a 4.860E-10 shilling increase in share price, *ceteris paribus*. The variable coefficient was not statistically different from zero and, the p value was greater than 0.05 (0.91) hence this variable was not statistically significant. For NSI, every point increase led to a 5.980E-6 shilling decrease in predicted, *ceteris paribus*. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.94) hence this variable was not statistically significant. For NASI, a point increase caused a 0.115 shilling increase in the share price, *ceteris paribus*. The p value was greater than 0.05 (0.18) hence this variable was not statistically significant as a predictor of share price. For every shilling increase in lagged SP, there was a 0.004 shilling decrease in the predicted share price, *ceteris paribus*. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.89) hence this variable was not statistically significant. Based on the foregoing explanations it was be concluded that KenGen share prices were not predicted by any of the assumed variables.

Kenya Reinsurance Corporation Limited (Kenya Re) was established in 1970 and is the oldest reinsurance company in Eastern and Central Africa. It was mandated to undertake and transact in any manner reinsurance and insurance business in and out of Kenya. The GoK intended Kenya Re to address the prevailing unsatisfactory conditions that were plaguing the local insurance sector. It offers reinsurance services to over 159 companies in Africa, Middle East and Asia.

The predicted model from Table 16 below was: $SP = -84.094 + 0.067IR + 0.073FOREX - 0.00000005915ET - 0.000007763NSI + 1.491NASI - 0.003SP_{t-1}$. The R-Square in Table 14 below showed that 0.3 percent of the variance in share price was predicted from the independent variables. The overall p value (Table 15 below) was more than 0.05 (0.815) and it was deduced that the group of independent variables when used together did not reliably predict the dependent variable therefore showed no significant statistical relationship. The ability of each individual independent variable to predict the dependent variable is addressed below based on the coefficients in Table 16 below.

Table 14: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.051 ^a	0.003	-0.003	368.8955

Table 15: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	400969.182	6	66828.197	0.49	.815 ^a
	Residual	154900000	1138	136083.887		
	Total	155300000	1144			

Table 16: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
1		B	Std. Error	Beta	t-value	Sig.
	(Constant)	-84.094	214.702		-0.392	0.695
	IR	0.067	3.036	0.001	0.022	0.982
	FOREX	0.073	1.908	0.001	0.038	0.97
	ET	-0.00000005915	0	-0.041	-1.196	0.232
	NSI	-0.000007763	0.001	0	-0.009	0.993
	NASI	1.491	1.012	0.056	1.473	0.141
	LAGGED SP	-0.003	0.03	-0.003	-0.094	0.925

For every percent increase in IR, a 0.067 shilling increase in share price was predicted, ceteris paribus. The p value was greater than 0.05 (0.98) hence this variable was not statistically significant as a predictor of share price. As for FOREX, every shilling increase led to a 0.073 shilling increase in the predicted share price, ceteris paribus. The p value was greater than 0.05 (0.97) hence this variable was not statistically significant as a predictor of share price. For every shilling increase in ET, a 5.915E-8 shilling decrease in share price was predicted, ceteris paribus. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.23) hence this variable was not statistically significant. The same trend was observed for NSI where for every point increase, there was a 7.763E-6 shilling decrease in the predicted share price, ceteris paribus. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.99) hence this variable was not statistically significant. As for NASI, a point increase led to a 1.491 shilling increase in the share price predicted, ceteris paribus. The p value was greater than 0.05 (0.14) hence this variable was not statistically significant as a predictor of share price. For lagged SP every shilling increase led to a 0.003 shilling decrease in the predicted share price, ceteris paribus. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.93) hence this variable was not statistically significant. From the foregoing explanations it can be concluded that Kenya Re share prices were not predicted by any of the assumed variables.

Mumias Sugar Company Limited is the leading sugar manufacturer in Kenya accounting for about 60% of domestic sugar output in Kenya. It was incorporated in 1971 and has diversified into water, ethanol and power production and currently produces 34MW of electricity of which 26MW is exported to the national grid.

The predicted model from Table 19 below was: $SP = -49.664 + 0.017IR + 0.388FOREX - 0.000000002ET + 0.000002484NSI + 0.34NASI + 0.043SP_{t-1}$. The R-Square from Table 17 below showed that 1.3 percent of the variance in share price can be predicted from the independent variables. The overall p value (Table 18 below) was less than 0.05 (0.023) and it was deduced that the group of independent variables when used together reliably predicted the dependent variable therefore showed a significant statistical relationship. The ability of each individual independent variable to predict the dependent variable is addressed below based on the coefficients in Table 19 below.

Table 17: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.113 ^a	0.013	0.008	43.93356

Table 18: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28551.565	6	4758.59	2.47	.023 ^a
	Residual	2196519.2	1138	1930.16		
	Total	2225070.76	1144			

Table 19: Model Coefficients

Model		Unstandardized Coefficients		Unstandardized Coefficients	t-value	Sig.
		B	Std	Beta		
1	(Constant)	-49.664	25.61	0.002	-1.94	0.05
	IR	0.017	0.362	0.058	0.05	0.96
	FOREX	0.388	0.227	-0.11	1.71	0.09
	ET	-0.000000002	0.000	0.001	-0.34	0.73
	NSI	0.000002484	0.000	0.107	0.02	0.98
	NASI	0.34	0.121	0.043	2081	0.01
	LAGGED SP	0.043	0.03		1.47	0.14

Every percent increase in IR resulted in a 0.017 shilling increase in the predicted share price, holding all other variables constant. This variable was not statistically significant as the p

value was more than 0.05 (0.96). As for FOREX, every shilling increase led to a 0.388 shilling increase in the predicted share price, holding all other variables constant. This variable was not statistically significant as the p value was more than 0.05 (0.09). Also, every shilling increase ET resulted in a 2.000E-9 shilling decrease in the predicted share price, holding all other variables constant. This variable coefficient was not statistically significantly different from zero and its p value was more than 0.05 (0.73) hence did not significantly predict share price. For every point increase in NSI there was a 2.484E-6 shilling increase in the predicted share price, holding all other variables constant. This variable coefficient was not statistically significantly different from zero and its p value was greater than 0.05 (0.98) hence did not significantly predict share price. As for NASI, a point increase led to a 0.34 shilling increase in the predicted share price, holding all other variables constant. This was statistically significant and was further enhanced by its p value being less than 0.05 (0.01). For the lagged SP, every shilling increase led to a 0.043 shilling increase in the predicted share price, holding all other variables constant. This was not statistically significant as the p value was more than 0.05 (0.14). Based on the above explanations, the predictor model for Mumias Sugar was rewritten as $SP = -49.664 + 0.34NASI$ meaning that the share price was

$$\begin{matrix} (0.05) & (0.01) \end{matrix}$$

dependent on the NASI.

Safaricom Limited started operations in 1993 as a department of Kenya Posts and Telecommunications Corporation (KPTC), the former monopoly operator, and was incorporated as a private limited company in 1997 and converted into a public company with limited liability in 2002. It is one of the leading integrated communications companies in Africa with over 19.1 million subscribers and provides a comprehensive range of services namely mobile and fixed voice as well as data services on a variety of platforms while locally it has the biggest market share in terms of subscribers, voice traffic, mobile data and SMS.

The predicted model Table 22 below was: $SP = -50.229 - 1.031IR + 0.452FOREX + 0.0000000125ET - 0.000008738NSI + 0.394NASI - 0.003SP_{t-1}$. The R-Square from Table 20 below showed that 0.2 percent of the variance in share price was predicted from the independent variables. The overall p value (Table 21 below) was more than 0.05 (0.856) and it was deduced that the group of independent variables when used together did not reliably predict the dependent variable therefore showed no significant statistical relationship. The ability of each individual independent variable to predict the dependent variable is addressed below based on the coefficients in Table 22 below.

Table 20: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.048 ^a	0.002	-0.003	197.60859

Table 21: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	101936.504	6	16989.417	0.435	.856 ^a
	Residual	44437936.99	1138	39049.154		
	Total	44539873.49	1144			

Table 22: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
		B	Std. Error	Beta		
1	(Constant)	-50.229	115.018		-0.437	0.662
	IR	-1.031	1.626	-0.022	-0.634	0.526
	FOREX	0.452	1.022	0.015	0.442	0.658
	ET	0.00000012	0	0.015	0.453	0.651
	NSI	-0.000008738	0	-0.001	-0.018	0.986
	NASI	0.394	0.542	0.028	0.726	0.468
	LAGGED SP	-0.003	0.03	-0.003	-0.113	0.91

For every percent increase in IR, a 1.031 shilling decrease in share price was predicted, ceteris paribus. The p value was greater than 0.05 (0.53) hence this variable was not statistically significant as a predictor of share price. As for FOREX, every shilling increase resulted in a 0.452 shilling increase in the predicted share price, ceteris paribus. The p value was greater than 0.05 (0.66) hence this variable was not statistically significant as a predictor of share price. For every shilling increase in the ET, a 1.200E-8 shilling increase in share price was predicted, ceteris paribus. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.65) hence this variable was not statistically significant. Every point increase in NSI led to a 8.738E-6 shilling decrease in the predicted share price, ceteris paribus. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.99) hence this variable was not statistically significant. As for NASI, each point increase led to a 0.394 shilling increase in the share price predicted, ceteris paribus. The p value was greater than 0.05 (0.47) hence this variable was not statistically significant as a predictor of share price. A shilling increase in lagged SP led to a 0.003 shilling decrease in the predicted share price, ceteris paribus. The variable coefficient was not statistically different from zero and the p value was greater than 0.05 (0.91) hence this

variable was not statistically significant. From the foregoing explanations it can be concluded that Safaricom share prices are not predicted by any of the assumed variables.

Sameer Africa Limited (formerly Firestone East Africa 1969 Limited) was established in Kenya in 1969 and deals in tyres and tyre accessories such as tubes. It got listed in NSE in 1995 and operates through six subsidiaries; Sameer Africa Limited Uganda, Sameer Africa Limited Tanzania, Yana Tyre Centre Limited, Sameer Industrial Park, Export Processing Zone (EPZ) and Sameer Business Park. It is one of the biggest tyre suppliers to the Common Market for Eastern and Southern Africa (COMESA).

The predicted model Table 25 below was: $SP = -12.292 + 0.090IR + 0.131FOREX + 0.000000002791ET - 0.000005851NSI + 0.075NASI + 0.002SP_{t-1}$. The R-Square, from Table 23 below, showed that 1.1 percent of the variance in share price was predicted from the independent variables. The overall p value (Table 24 below) was more than 0.05 (0.051) and it was deduced that the group of independent variables when used together did not reliably predict the dependent variable therefore showed no significant statistical relationship. The ability of each individual independent variable to predict the dependent variable is addressed below based on the coefficients in Table 25 below.

Table 23: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.104 ^a	0.011	0.006	13.36913

Table 24: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2244.589	6	374.098	2.09	.051 ^a
	Residual	203398.806	1138	178.734		
	Total	205643.395	1144			

Table 25: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
		B	Std. Error	Beta		
1	(Constant)	-12.292	7.79		-1.578	0.115
	IR	0.09	0.11	0.028	0.815	0.415
	FOREX	0.131	0.069	0.064	1.891	0.059
	ET	-0.000000002791	0	0.053	1.557	0.12
	NSI	-0.000005851	0	-0.005	-0.18	0.857
	NASI	0.075	0.037	0.078	2.04	0.042
	LAGGED SP	0.002	0.03	0.002	0.076	0.939

For every percent increase in IR, a 0.090 shilling increase in the predicted share price was noted, ceteris paribus. The variable was not statistically significant as the p value was more than 0.05 (0.42). As for FOREX, every shilling increase led to a 0.131 shilling increase in the predicted share price, holding all other variables constant. This variable was not statistically significant as the p value was more than 0.05 (0.06). For every shilling increase in ET, a 2.791E-9 shilling increase in share price was predicted, holding all other variables constant. This variable coefficient was not statistically significantly different from zero and its p value was more than 0.05 (0.12) hence did not significantly predict share price. A point increase in NSI led to a 5.851E-6 point decrease in the predicted share price, holding all other variables constant. This variable coefficient was not statistically significantly different from zero and its p value is greater than 0.05 (0.86) hence did not significantly predict share price. As for NASI, a point increase resulted in a 0.075 shilling increase in the share price, holding all other variables constant. This was statistically significant and was further enhanced by its p value being less than 0.05 (0.04). Every shilling increase in the lagged SP resulted in a 0.002 shilling increase in the predicted share price, holding all other variables constant. This was not statistically significant as the p value was more than 0.05 (0.94). Based on the above explanations, the predictor model for Sameer was rewritten as $SP = -12.292 + 0.075NASI$ meaning that the share price was dependent on the NASI.

$$\begin{matrix} (0.115) & (0.042) \end{matrix}$$

4.4 Summary

The general results indicated that there is no one model to predict share prices at NSE. With the exception of Equity Bank share prices which showed a positive relationship with IR, FOREX, NASI and lagged SP, all the other firms indicated a negligible or no relationship with the variables. While all the other variables had a slight significant relationship to the dependent variable, ET and NSI were in all cases negligible determinants of share price.

Overall the R-Square of all the regressions was generally low (from 5.6 percent to 0.2 percent) denoting that the strength of association between the variables was low and other factors influence share price.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study was carried out to identify the factors that influence share prices for the selected sectors at NSE. Panel data for the period June 2008 to December 2012 was gathered on the seven variables (SP as the dependent variable and IR, FOREX , ET, NSI, NASI and lagged SP as the independent variables).

5.2 Summary

The results indicate that the selected independent variables cannot be exclusively used as determinants of share price as they have negligible impact. This was been observed in all the regression results of the selected firms and denoted an inefficient market in terms of relative information that is available.

Equity Bank share prices were dependent on IR, FOREX, NASI and lagged SP. This could be explained by the fact that the share prices had a large differential and therefore could adapt more easily to the variables under study. Mumias Sugar and Sameer share prices were found to be dependent on NASI while the share prices of KQ, KenGen and Kenya Re were found not to be related / predicted by any of the assumed variables.

From the above results, NASI seemed to have a slightly larger significance in determination of share prices which could have been influenced by the fact that it incorporates all companies quoted at NSE. The other variables have negligible effect on share prices with the exception of Equity bank where IR, FOREX and lagged SP were also found to be significant determinants of share price.

5.3 Conclusion

The results of the empirical analysis are consistent with most of the findings in the literature review and support the evidence that the selected determinants have little effect on share price. The study revealed that the selected variables are independent series although there was indication of some causality relationship from some of the variables such as interest rate, FOREX, NASI and lagged share price. Share prices are influenced by numerous factors so that predictions using only a number of select variables may give incorrect results. Many

researchers have striven hard to build models which incorporate a diverse array of variables to predict the share prices but have not been successful in having one such model.

5.4 Recommendations

The low R-Square values of 5.6 percent to 0.2 percent indicated other unexplored factors that might influence SP. This research centred on seven firms for a five year period. Stock markets are very complex hence finding a pattern in share price is quite difficult when using limited data and time period. Due to the seasonality and cyclic nature of stock markets the time period selected may have affected the final results. The selection of variables could also be of concern, for example there are many IR in use (such as inter-bank interest rates, commercial banks interest rates) and selection of one that does not have any bearing on the share price may affect the results.

Possible further research recommended in line with the present study are:

- i) The present research can be extended to cover longer time periods, more firms and more macroeconomic variables.
- ii) This study focussed on the linear relationships and could be extended to include non-linear relationships between the variables. Also, other multivariate statistical forecasting models could be employed to verify the results.

5.5 Limitations

The main limitation of the study was the number of firms selected (seven) for analysis, the time period (five years) and limited variables. The daily data for the firms and variables was numerous and from multiple sources hence the need to limit the variables and firms . Also given the varied results of the regressions the variables selected could be limitations in themselves.

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APPENDICES

Appendix 1: Initial Public Offers Issued at Nairobi Securities Exchange Between 1988 and 2008

Year of Issue	Company	Authorized Share Capital (Kshs.)	Issued and Fully Paid Share Capital (Kshs.)	Shares Floated	Share Applications	Subscription Rate	Issue Price	% held by foreign investors	% held by local individuals	% held by local institutions
1988	Kenya Commercial Bank	3,500,000,000	2,950,259,818	7,500,000	24,525,000	327%	20.00	22.28	26.12	51.60
1988	Total Kenya Ltd	908,150,000	865,067,000					94.11	4.80	1.14
1988	Nation Media Group	600,000,000	392,796,430	2,500,000	3,325,000	133%	11.50	47.72	29.78	22.50
1989	Standard Chartered Bank of Kenya	1,645,000,000	1,359,839,000	21,000,000	48,930,000	233%	14.50	75.01	11.57	13.39
1992	Uchumi Supermarkets Ltd (Delisted in 2006 and relisted in 2011)	1,327,133,070	1,327,133,070	16,000,000	16,512,000	103%	14.50	19.13	47.70	38.17
1992	Crown-Berger Kenya Ltd	125,000,000	118,635,000	8,638,000	8,983,520	104%	16.00	20.31	21.97	57.72
1992	Housing Finance Company of Kenya	1,178,750,000	1,150,000,000	18,000,000	72,000,000	400%	7.00	1.71	31.21	67.07
1994	Sameer Africa Ltd (Formerly Firestone East Africa (1969) Ltd)	1,500,000,000	1,391,712,000	40,000,000	40,400,000	101%	33.50	17.47	18.38	61.14
1994	National Bank of Kenya	3,000,000,000	1,400,000,000	40,000,000	120,000,000	300%	10.00	0.33	75.69	23.96
1996	Rea Vipingo Plantations Limited	300,000,000	300,000,000	8,000,000	17,280,000	216%	10.50	60.86	31.34	7.80
1996	Kenya Airways	5,000,000,000	2,308,000,000	235,423,896	458,134,902	195%	11.25	44.62	11.66	43.72
1997	Tourism Promotion Services (TPS)									
1997	Eastern Africa Ltd (Serena Hotels)	192,000,000	148,210,640	12,890,000	51,560,000	400%	13.00	54.28	11.26	34.46
1997	Athi River Mining Ltd	675,000,000	495,275,000	23,000,000	57,500,000	250%	12.25	24.49	25.19	50.32
2000	African Lakes (Delisted in 2003)			4,000,000	6,000,000	150%	94.50			
2001	Mumias Sugar Company Ltd	5,000,000,000	3,060,000,000	300,000,000	180,000,000	60%	6.25	6.67	50.58	42.75
2006	Kenya Electricity Generating Company (Kengen)	5,539,819,000	5,495,904,000	658,900,000	2,194,137,000	333%	11.90	1.21	16.70	86.51
2006	Scangroup Ltd	240,690,000	220,689,655	69,000,000	427,800,000	620%	10.45	59.95	24.20	15.86
2006	Equity Bank Ltd	1,851,388,510	1,851,388,510	90,000,000	207,000,000	230%	70.00	46.48	17.75	35.77
2006	Eveready East Africa Ltd	210,000,000	210,000,000	63,000,000	522,900,000	830%	9.50	10.77	31.85	57.38
2007	Access Kenya	500,000,000	199,227,000	80,000,000	290,400,000	363%	10.00	22.50	57.75	19.74
2007	Kenya Reinsurance Corporation Ltd	2,000,000,000	1,500,000,000	240,000,000	801,600,000	334%	9.50	2.21	16.50	81.29
2008	Safaricom Ltd	5,999,999,980	2,000,000,000	10,000,000,000	53,200,000,000	532%	5.00	11.89	5.99	82.12
2008	Cooperative Bank of Kenya Ltd	3,700,000,000	3,492,370,900	701,000,000	567,810,000	81%	9.50	2.47	19.67	77.85
	Mean					286%				
	Standard Deviation					19.16%				

Source: NSE and CMA

Appendix 2: Comparative Performance (Price) for Twelve Companies

Company	Year of Issue	Issue Price (KShs)	Authorized Share Capital (KShs)	Issued and Fully Paid Share capital (KShs)	Share Price Average for 2008 (KShs)	Share Price Average for 2009 (KShs)	Share Price Average for 2010 (KShs)	Share Price Average for 2011 (KShs)	Share Price Average for 2012 (KShs)
Kenya Commercial Bank (KCB)	1988	20.00	3,500,000,000	2,950,259,818	25.38	20.00	20.65	20.88	22.68
Standard Chartered Bank (SCBK)	1988	14.50	1,645,000,000	1,359,839,000	193.50	147.00	227.50	236.50	196.50
Housing Finance Company of Kenya (HFCK)	1994	7.00	1,178,750,000	1,150,000,000	66.40	16.48	22.75	22.13	15.45
Sameer Africa Ltd (Formerly Firestone)	1994	33.50	1,500,000,000	1,391,712,000	9.73	5.33	7.58	6.90	4.28
National Bank of Kenya (NBK)	1994	10.00	3,000,000,000	1,400,000,000	101.75	35.00	45.00	39.00	21.50
Kenya Airways (KQ)	1996	11.25	5,000,000,000	2,308,000,000	51.00	26.38	50.75	42.28	21.13
Mumias Sugar Company Ltd	2001	6.25	5,000,000,000	3,060,000,000	26.05	5.30	11.03	9.98	5.88
Kenya Electricity Generating Company (Kengen)	2006	11.90	5,539,819,000	5,495,904,000	24.50	13.25	14.95	13.40	8.90
Equity Bank Ltd	2006	70.00	1,851,388,510	1,851,388,510	218.00	15.45	20.38	22.63	20.38
Kenya Reinsurance Corporation Ltd	2006	9.50	2,000,000,000	1,500,000,000	14.35	12.25	11.10	10.80	10.10
Safaricom	2008	5.00	5,999,999,980	2,000,000,000	5.58	3.85	5.10	4.43	4.00
Cooperative Bank of Kenya Ltd	2008	9.50	3,700,000,000	3,492,370,900	11.30	8.55	14.75	15.55	13.15

Source: NSE

Appendix 3: Nairobi Securities Exchange Listed Companies

NSE LISTED COMPANIES		
AGRICULTURAL	COMMERCIAL AND SERVICES	INSURANCE
Eaagads Ltd Ord 1.25 AIMS*	Express Kenya Ltd Ord 5.00 AIMS	British-American Investments Co.(Kenya)Ltd Ord 0.10
Kakuzi Ltd Ord.*5.00	Hutchings Biemer Ltd Ord 5.00 (suspended)*	CFC Insurance Holdings Ltd ord.1.00
Kapchorua Tea Co. Ltd Ord Ord 5.00 AIMS	Kenya Airways Ltd Ord 5.00	Jubilee Holdings Ltd Ord 5.00
The Limuru Tea Co. Ltd Ord 20.00 AIMS	Longhorn Kenya Ltd Ord 1.00 AIMS	Kenya Re Insurance Corporation Ltd Ord 2.50
Rea Vipingo Plantations Ltd Ord 5.00	Nation Media Group Ltd Ord. 2.50	Pan Africa Insurance Holdings Ltd Ord 5.00
Sasini Ltd Ord 1.00	Scangroup Ltd Ord 1.00	
Williamson Tea Kenya Ltd Ord 5.00 AIMS	Standard Group Ltd Ord 5.00	INVESTMENT
	TPS Eastern Africa Ltd Ord 1.00	Centum Investment Co Ltd Ord 0.50
AUTOMOBILES & ACCESSORIES	Uchumi Supermarket Ltd Ord 5.00	City Trust Ltd Ord 5.00 AIMS
Car & General (K) Ltd Ord 5.00		Olympia Capital Holdings Ltd Ord 5.00
CMC Holdings Ltd Ord 0.50 (suspended)*	CONSTRUCTION & ALLIED	Trans-Century Ltd Ord 0.50 AIMS
Marshalls (E.A.) Ltd Ord 5.00	Athi River Mining Ord 5.00	
Sameer Africa Ltd Ord 5.00	Bamburi Cement Ltd Ord 5.00	MANUFACTURING & ALLIED
	Crown Berger Kenya Ltd Ord 5.00	A.Baumann & Co Ltd Ord 5.00 AIMS (Suspended)*
BANKING	E.A.Cables Ltd Ord 0.50	B.O.C Kenya Ltd Ord 5.00
Barclays Bank of Kenya Ltd Ord 0.50	E.A.Portland Cement Co. Ltd Ord 5.00	British American Tobacco Kenya Ltd Ord 10.00
CFC Stanbic of Kenya Holdings Ltd ord.5.00		Carbacid Investments Ltd Ord 5.00
Diamond Trust Bank Kenya Ltd Ord 4.00	ENERGY & PETROLEUM	East African Breweries Ltd Ord 2.00
Equity Bank Ltd Ord 0.50	KenGen Co. Ltd Ord. 2.50	Eveready East Africa Ltd Ord.1.00
Housing Finance Co. Kenya Ltd Ord 5.00	KenolKobil Ltd Ord 0.05	Kenya Orchards Ltd Ord 5.00 AIMS
Kenya Commercial Bank Ltd Ord 1.00	Kenya Power & Lighting Co Ltd Ord 2.50	Mumias Sugar Co. Ltd Ord 2.00
National Bank of Kenya Ltd Ord 5.00	Total Kenya Ltd Ord 5.00	Unga Group Ltd Ord 5.00
NIC Bank Ltd Ord 5.00		
Standard Chartered Bank Kenya Ltd Ord 5.00		TELECOMMUNICATION & TECHNOLOGY
The Co-operative Bank of Kenya Ltd Ord 1.00		AccessKenya Group Ltd Ord. 1.00
		Safaricom Ltd Ord 0.05
KEY		
AIMS - Alternative Investment Market Segment		
Ord - Ordinary Shares		
Suspended - The Shares of the Company have been suspended from trading at the NSE		

Source: CMA