

**MACRO-ECONOMIC DETERMINANTS OF STOCK MARKET  
PERFORMANCE IN KENYA: CASE OF NAIROBI SECURITIES EXCHANGE**

**BY:**

**JOB WANJALA BARASA**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF  
SCIENCE FINANCE, SCHOOL OF BUSINESS UNIVERSITY OF NAIROBI**

**OCTOBER 2014**

## **DECLARATION**

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the University of Nairobi for academic credit.

**Signed:** \_\_\_\_\_      **Date:** \_\_\_\_\_

**JOB WANJALA BARASA**

**REG No: D63/65539/2013**

This research project has been submitted for examination with my approval as the University Supervisor:-

**Signed:** \_\_\_\_\_      **Date:** \_\_\_\_\_

**Mr. Mirie Mwangi**

**LECTURER DEPARTMENT OF FINANCE AND ACCOUNTING**

**SCHOOL OF BUSINESS**

**UNIVERSITY OF NAIROBI**

## **ACKNOWLEDGEMENT**

I acknowledge my family members and friends whose support made it possible for me to go through the academia process successfully.

I also acknowledge my fellow students, and lecturers at the University of Nairobi whose wells of knowledge I drew from through the academic period, and have made me a better professional.

I would also like to specially acknowledge my supervisor, Mr. Mirie Mwangi, who has guided me tirelessly through the research project; his guidance has been invaluable.

I acknowledge the Almighty God for His invaluable support and provision.

## **DEDICATION**

I dedicate this work to the University of Nairobi and to my family for their invaluable support and patience during this study, and to my son, Adrian Fodi Wanjala, whose constant reality check and mirthful reminders made this work a joy even during hard times.

## TABLE OF CONTENTS

<b>DECLARATION</b> .....	ii
<b>ACKNOWLEDGEMENT</b> .....	iii
<b>DEDICATION</b> .....	iv
<b>LIST OF TABLES</b> .....	viii
<b>LIST OF FIGURES</b> .....	ix
<b>LIST OF ABBREVIATIONS</b> .....	x
<b>ABSTRACT</b> .....	xi
<b>CHAPTER ONE: INTRODUCTION</b> .....	1
1.1 Background of the Study .....	1
1.1.1 Stock Market Performance .....	2
1.1.2 Macro Economic Determinants of Stock Market Performance.....	3
1.1.3 Stock Market Performance and its Determinants .....	5
1.1.4 Nairobi Securities Exchange.....	7
1.2 Research Problem .....	9
1.3 Objective of the Study .....	10
1.4 Value of the Study .....	10
<b>CHAPTER TWO: LITERATURE REVIEW</b> .....	12
2.1 Introduction.....	12
2.2 Theoretical Review .....	12
2.2.1 McKinnon and Shaw theory .....	12
2.2.2 Market Efficiency Theory.....	13

2.2.3 Keynesian Economic Theory .....	15
2.3 Determinants of Stock Market Performance.....	15
2.5 Summary of Literature Review.....	21
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>23</b>
3.1 Introduction.....	23
3.2 Researcher Design .....	23
3.3 Target Population.....	24
3.4 Data Collection .....	24
3.5 Data Analysis .....	25
3.5.1 Analytical model .....	25
3.5.2 Test of Significance .....	26
<b>CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION .....</b>	<b>27</b>
4.1 Introduction.....	27
4.2 Response Rate.....	27
4.3: Data Validity.....	27
4.4 Descriptive Statistics.....	27
4.5 Correlation Analysis .....	28
4.6 Regression Analyses and Hypothesis Testing .....	29
4.6.1 NSE 20 Share Index.....	29
4.6.2 Consumer Price Index.....	31
4.6.3 Money Supply “M3” .....	32
4.6.4 Real Gross Domestic Product (GDP) .....	33
4.6.5 Model Summary Statistics .....	34

4.6.6 Analysis of Variance.....	35
4.6.7 Model Coefficients.....	35
4.7 Discussion of Research Findings .....	37
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS .....</b>	<b>40</b>
5.1 Introduction.....	40
5.2 Summary of Findings.....	40
5.3 Conclusion .....	41
5.4 Recommendations.....	42
5.5 Limitations of the Study.....	43
5.6 Suggestions for Further Studies .....	44
<b>REFERENCES.....</b>	<b>45</b>
<b>APPENDICES .....</b>	<b>50</b>

## LIST OF TABLES

Table 4.1: Descriptive Statistics .....	28
Table 4.2: Correlation Analysis .....	28
Table 4.3: Model Summary Statistics .....	34
Table 4.4: Analysis of Variance.....	35
Table 4.5: Model Coefficients .....	36



## LIST OF FIGURES

Figure 4.1: Trend of NSE 20 Share Index .....	30
Figure 4.2: Consumer Price Index .....	31
Figure 4.3: Money Supply .....	32
Figure 4.4: Real GDP per Capita .....	33

## LIST OF ABBREVIATIONS

ADB	African Development Bank
CBK	Central Bank of Kenya
CDS	Central Depository System
CPI	Consume Price Index
FEX	Foreign exchange rate
GDP	Gross Domestic Product
IMF	International Monetary Fund
IPI	Industrial Production Index
KLCI	Kuala Lumpur Composite Index
KNBS	Kenya National Bureau of Statistics
MBA	Master of Business Administration
NSE	Nairobi Securities Exchange
NASI	NSE All Share Index
OLS	Ordinary Least Squares

## ABSTRACT

The study sought to establish the determinants of stock market performance and used Nairobi Securities Exchange. The study was guided by an objective; to examine the effect of the selected macro-economic determinants of stock market performance in Kenya. The selected macro-economic variables included inflation rate, money supply and real GDP per capita. The study followed descriptive research design and used secondary data. The data spanned the period between 2000 and 2013. The data used for the analysis was the average annual figures and was obtained from; Nairobi Securities Exchange (NSE 20-Share), Central Bank of Kenya (CPI), Kenya National Bureau of Statistics (GDP per Capita) and International Monetary Fund website (Money Supply M3). The data was analysed using SPSS version 20. The study results established that NSE 20-Share Index (used to measure stock market performance) as well as CPI (used to measure inflation), money supply (used M3), and GDP per Capita deteriorated just before, during and immediately after the general elections. The regression analysis obtained Coefficient of determination (R), Correlation Coefficient (R-Square), P-Value and F-test statistics which were; 0.618, 0.382, 0.169 and 2.060 respectively. Since R was positive (0.618) the relationship between the Stock Market Performance and the macro-economic variables was positive. Since, R-Square was way below 0.75 as it was (0.382) the relationship between NSE performances as measured by NSE 20-Share Index is very weak. However, the study results established that the relationship between inflation as measured by CPI and Stock Market Performance is inverse as the corresponding coefficient in the model was negative. Also, since P-Value (0.382) was greater than 0.05, the established model describing the relationship between the study variables is statistically insignificant. This was supported by the F-test as the obtained test Statistics from the F-table at F10,3:0.05 was 8.79 which was greater than the F-test statistic 2.060, determined through the analysis. Furthermore, P-Values associated with each of the determinants variables were all greater than 0.05 depicting that the selected macro-economic variables were individually statistically insignificant in predicting the stock market performance. The study concludes that there is a weak positive relationship between the selected macro-economic variables (money supply, and GDP per capita) together and stock market performance. Further, the study concludes that the relationship between inflation and stock market performance is inverse but insignificant. The study concludes that the regulators including CBK should be proactive rather reactive as relates management of the macroeconomic variables. Also, since the study established that the macro-economic variables and stock market performance deteriorated just before, during and immediately after electioneering periods, succinct political and election structures should be established and regulations upheld to avert possible distortions of macro-economic factors and stock market performance and other economic agents.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

The stock market 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 (Osoro, 2013). 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 (Osoro, 2013; My Stock, 2014). Having knowledge of such factors and their possible impact on share prices is highly appreciable on the part of both firms and investors (Eita, 2011). 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.

### **1.1.1 Stock Market Performance**

Stock market performance is the assessment of an efficient market. A basic feature of an efficient capital market is constant liquidity, an easy mechanism for entry and exit by investors. This requires sufficient volume and size of transactions in the market (Yartey and Adjasi, 2007). The stock market forms a significant component of the financial sector of any economy. A well-functioning stock market is expected to lead to a lower cost of equity capital for firms and allow individuals to more effectively price and hedge risk. Stock markets can attract foreign portfolio capital and increase domestic resource mobilization, expanding the resources available for investment in developing countries.

As Yarti and Adjasi (2007) indicate, when recognizing the importance of stock market on economic growth, prudential authorities such as World Bank, IMF and ADB undertook stock market development programs for emerging markets in developing countries during 1980s and 1990s and they found that, emerging stock markets have experienced considerable development since the early 1990s. The market capitalization of emerging market countries has more than doubled over the past decade growing from less than \$2 trillion in 1995 to about \$5 trillion in 2005 (Yartey and Adjasi, 2007). As a percentage of world market capitalization, emerging markets are now more than 12 percent and steadily growing (Standard and Poor, 2005).

The NSE 20 Share Index is a price weight index. The members are selected based on a weighted market performance for a 12 month period as follows: Market Capitalization 40%, Shares Traded 30%, Number of deals 20%, and Turnover 10%. Index is updated at

the end of the day (My Stocks, 2014). It represents the geometric mean of share prices of the NSE's 20 top stocks. It has recently been joined by the more broad-based NSE All Share Index (NASI), aimed at capturing the market capitalization of all the NSE's listed equities traded in a day.

### **1.1.2 Macro Economic Determinants of Stock Market Performance**

The primary function of any stock market is to play the role of supporting the growth of the industry and economy of the country and it is also the measurement tool that gives the idea about the industrial growth as well as the stability of the economy with their performance. The rising index or consistent growth in the index is the sign of growing economy and if the index and stock prices are on the falling side or their fluctuations are on the higher side it gives the impression of un stability in the economy exist in that country (Garza-Garsia and Yu, 2010).

On the other hand both theory and empirical literatures hold that the growth of a country is directly related to the economy, which consists of various variables like GDP, Foreign Direct Investment, Remittances, Inflation, Interest rate, Money supply, Exchange rate and many others (Aduda, Masila and Onsongo, 2012). These variables are the backbone of any economy. The movements in the stock prices are affected by changes in fundamentals of the economy and the expectations about future prospects of these fundamentals. Stock market index is a way of measuring the performance of a market over time. These indices used as a benchmark for the investors or fund managers who compare their return with the market return.

Also, several prior empirical studies 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 (Aduda, Masila and Onsongo, 2012). Their findings indicate that share price determination is very diverse and conflicting. From the basic philosophy (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 (Garza-Garsia and Yu, 2010). In assessing the determinants of stock market performance, this paper will mainly consider exchange rate, inflation rate, money supply and real gross domestic product (real GDP). Money supply and inflation have positive relationship among themselves. However, money supply and inflation have a dual effect on stock returns. Theory holds that an increase in money supply will increase inflation, which is noted to increase expected rate of return.

Also, increase in money supply and inflation increases future cash flow of the firm, which in turn, increases expected dividend, and will increase stock prices. Depreciation of the domestic currency against foreign currencies increases export. Also, exchange rate is said to have a negative relationship with the stock returns. But, at the same time, depreciation of the domestic currency increases the cost of imports, which indicates a positive relationship between them. According to Barako (2007), if these determinants were to be chosen from a theoretical perspective in as far as identifying the main macroeconomic determinants of stock market development and the impact of financial intermediary development on stock market capitalization is concerned; it would be identified that saving rate, financial intermediary (credit to private sector), stock market

liquidity (the ratio of value traded to GDP) and the stabilization variable (inflation change) are some of the determinants of stock market development. Financial intermediaries and stock markets are complements rather than substitutes in the growth process.

### **1.1.3 Stock Market Performance and its Determinants**

There are two types of investors exist in the market, a bullish investor is someone who invests with an expectation that stock prices will rise. Conversely, a bearish investor believes financial market conditions are not conducive to gains and therefore trades stocks accordingly. Both types of investors want to take advantage of the movement in stock prices and to maximize their profit accordingly (Mehwish, 2013). The movement in stock prices is directly related to some fundamentals like performance of the company, movement in key macroeconomic variables and government actions (Karitie, 2010).

McKinnon and Shaw (1973) theory argue that macro-economic variables such as real interest rates money supply and inflations should be monitored as they influence the diverse economic fundamentals and hence economic status. For example, they posit that if interest rates are kept below the market equilibrium, this can increase the demand for investment but not the actual investment. However, according to market efficiency theory the prices of all variables should not be influenced by other factors apart from demand and supply (Fama, 2000). He defines market efficiency very clearly as a market in which prices always fully reflect all available information



Market efficiency theory suggests that market is rational and provides correct pricing. That is, the current prices of securities are close to their fundamental values because of either the rational investors or the arbitragers buy and sell action of under-priced or overstocked priced stocks. If this is the case, then macro-economic variables are not expected to affect the price of stocks at the Nairobi Securities Exchange. In his Treatise on Money, Keynes argued for the importance of sector inputs in influencing economic growth. The Keynesian Economic Theory holds that policies focus on the short-term needs and how economic policies can make instant corrections to a nation's economy. In this view, players of the economy ought to know the relationship between the various economic variables that are in play.

While some studies have identified that macro-economic variables have an impact on the stock exchange market, others have identified no significant impact or relationship between the macro-economic variables and stock performance. For instance, Aduda, Masila and Onsongo (2012) sought to investigate the determinants of development of NSE. They established that stock market development is affected 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.

Buigut, Soi, Koskei and Kibet (2013), on the other hand, studied the relationship between capital structure and share prices in NSE. They assessed the effect of debt, equity and gearing ratio on share price. 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. All these variables theoretically tend to have a relationship with GDP.

Kipngetich, Kibet, Guyo and 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. 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.

Waweru (2010) sought to establish if there exists a relationship between stock prices and news of an IPO at NSE. 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 capitalize 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.

#### **1.1.4 Nairobi Securities Exchange**

Nairobi securities exchange – formally Nairobi stock exchange is the institution that is tasked with the responsibility to oversee listing, delisting and regulation of trading of financial securities such as shares. According to My Stock (2014), the NSE 20-Share

Index (NSE 20) is the long-standing benchmark index used for equities traded on Kenya's Nairobi Stock Exchange (NSE) and represents the geometric mean of share prices of the NSE's 20 top stocks. The NSE 20-Share Index was introduced in 1964, one year after African natives were first allowed to trade on the NSE. It was joined in February 2006 by the NSE All Share Index (NASI), aimed at reflecting the total market value of all stocks traded on the NSE in one day rather than just the price changes of the 20 best performers captured by the NSE 20.

Stocks (2014) states that the members are selected based on a weighted market performance for a 12 month period as follows: Market Capitalisation is 40%, shares traded are 30%, number of deals is 20% and turnover is 10%. Index is updated only at the end of the day. Companies included in the index are Mumias Sugar, Express Kenya, Rea vipingo, Sasini Tea, CMC Holdings, Kenya Airways, Safaricom, Nation Media Group, Barclays bank of Kenya, Equity Bank, Kenya Commercial Bank, Standard Chartered Bank, Bamburi Cement, British American Tobacco, Kengen, Centum Investment Company, East African Breweries, EA Cables, Kenya Power and Lighting Company Limited and Athi River Mining. This index primarily focuses on price changes amongst those 20 companies.

Osoro (2013), notes that there have been complaints about the computation of the NSE 20 SHARE Index. The feeling has been that it is not reflective of the market performance. He adds that this is partly because the index is equally weighted. For instance, this meant that KenGen, which has a market capitalization of about Sh57 billion carries the same weight as Express Kenya, under market capitalization which is only

SH814 million or a seventh of its size as at February 2008. Assigning equal weights to two companies with such a huge difference in their market capitalization is obviously unrealistic. Nevertheless, it has not been eliminated as a way of measuring performance and so it will be used in this research paper.

## **1.2 Research 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 and Sayekt, 2008)

Garcia and Liu (1999) established that macroeconomic volatility does not affect stock market performance, while Maku and Atanda (2010) revealed that the stock market performance in Nigeria is mainly affected by macro-economic forces in the long-run in Nigeria. Ting et al. (2012) established that Kuala Lumpur Composite Index is consistently influenced by interest rate, money supply and consumer price index in the short run and long-run in Malaysia. Mehwish (2013) established that there is a negative relationship between real interest rate and stock market performance in Pakistan. Jahur et

al. (2014) established macro-economic variables such as Consumer Price Index, Interest Rate have significant impact on the stock market performance in Bangladesh.

A regression analysis conducted by Aduda, Masila, and Onsongo (2012) reported that there is no relationship between stock market development and Macro-economic stability - inflation and private capital flows. Mongeri (2011) established that foreign exchange rates have a negative significant impact on stock market performance. Also, Songole (2012) established that market interest rate, consumer price index and exchange rate have a negative relationship with stock return. Ochieng and Adhiambo (2012) established that 91 – day T-bill rate has a negative relationship with the NASI while inflation has a weak positive relationship with the NASI. Kimani and Mutuku (2013) showed that there is a negative relationship between inflation and stock market performance in Kenya.

It is notable that there is lack of a consensus of the effect of macro-economic factors, on stock market performance. The question of this study is what are the macro-economic determinants of stock market performance in Kenya?

### **1.3 Objective of the Study**

To examine the effect of the selected macro-economic determinants of stock market performance in Kenya.

### **1.4 Value of the Study**

Capital Market Authority 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.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter provides literatures from past researchers and scholars on the determinants of stock market performance. The chapter examines the concepts and theories on determinants of stock market performance with major focus on macro-economic variables; Exchange rate, inflation rate, money supply, and real output – Real Gross Domestic Product. By considering literatures from diverse past authors, the chapter forms the theoretical and the conceptual framework of the study on the determinants of stock Market performance in Kenya.

### **2.2 Theoretical Review**

Theoretical review is the theoretical foundation of a study. A theoretical research has its findings based on existing theories and hypothesis; there is no practical application in the research, while an empirical research has its findings based on the verification through experiments, experiences and observations. This study is founded on both theory and empirical literatures. Ensuing are the theories upon which this study is founded upon.

#### **2.2.1 McKinnon and Shaw theory**

McKinnon (1973) and Shaw (1973) argued that if real interest rates are kept below the market equilibrium, this could increase the demand for investment but not the actual investment. Low interest rates are insufficient to generate savings; it can even reduce savings especially if substitution effects dominate the income effect for households. On

the other hand, low rates raise the expected profitability of investment projects by raising the net present value of future earnings from the project. The theory rests on the assumptions that saving is an increasing function of real rate of interest on deposits and real rate of growth in output and that investment is a decreasing function of the real loan rate of interest and an increasing function of the growth rate.

The theory posits that the nominal interest rate should be administratively fixed. They advance that emerging economies are fragmented; hence there is a greater likelihood of having investments that are less productive. Capital accumulation is discouraged by the fact that for a high inflation rate, nominal interest rates are set too low and thus real interest rates could be negative. As capital supply of banking sector is limited and banks have only specialized credit activities, people have to finance their investment projects by themselves or have to go to the informal sector where interest rates are often usurious.

### **2.2.2 Market Efficiency Theory**

Market efficiency theory suggests that a market is rational and provides correct pricing. That is, the current prices of securities are close to their fundamental values because of either the rational investors or the arbitragers buy and sell action of under-priced or overstocked priced stocks. On the other hand, observed market anomalies have a challenge for this argument.

Fama (2000) presented a landmark paper on the efficient market, which focused on comprehensive review of the theory and beyond the theory to empirical work. He defines market efficiency very clearly as a market in which prices always fully reflect all



available information. Fama distinguished three nested information sets: past prices, publicly available information and all the information including private information. Efficient market hypothesis is divided into three stages as the weak form, semi-strong form, and the strong form with respect to the availability of the above-mentioned three information sets.

Weak form of efficiency claims that the current stocks prices already reflect all historical market data such as the past prices and trading volumes (Bodie et al, 2007) .The assertion of weak form of efficiency is very much consistent with the findings of researches on random walk hypothesis; that is, the price changes from one time to another are independent Dixon et al (1992).

Semi strong form of efficiency states that, in addition to the past prices, all publicly available information including fundamental data on the firm's product line, earnings forecast, dividend, stock splits announcements, quality of management, balance sheet composition, and patents held, accounting practices etc should be fully reflected in security prices. Thus, one cannot make superior profit by using the fundamental analysis in the market, which is efficient in the semi-strong form. Strong form of efficiency states that market prices reflect all information including the past prices and all publicly available information plus all private information. In such a market, prices would always be fair and any investor, even consider traders cannot beat the market.

### **2.2.3 Keynesian Economic Theory**

Keynes (1930), in his *Treatise on Money*, argued for the importance of the banking sector in economic growth. He suggested that bank credit "is the pavement along which production travels, and the bankers if they knew their duty, would provide the transport facilities to just the extent that is required in order that the productive powers of the community can be employed at their full capacity". Keynesian economics focuses on immediate results in economic theories.

Policies focus on the short-term needs and how economic policies can make instant corrections to a nation's economy. Also, the government is seen as the only force to end financial and economic downturns through monetary or fiscal policies, and providing aggregate demand to increase the level of economic output, facilitated through a stable financial system that can spur continued economic stability. Keynes later in 1930s supported an alternative structure that includes direct government control of investment and advanced that financial deepening can occur due to an expansion in government expenditure. Since higher interest rates lower private investment, an increase in government expenditure promotes investments and reduces private investments concurrently.

### **2.3 Determinants of Stock Market Performance**

According to Geetha et al. (2011), financial theorists posit that there are direct and indirect aftermaths of inflation in every sector of the economy ranging from exchange rates, investment, unemployment, interest rates, and stock markets among others. Also,

theorists conclude that inflation and stock markets share a very close association, and that the rate of inflation influences stock market volatility and risk

### **2.3.1 Exchange Rate**

Exchange rate is the value of one currency for the purpose of conversion to another. Exchange rate movements greatly affected the stock market return volatility owing to its information content to the investors. When there are high fluctuations in the exchange rates, the exchange rates movement, there would be high movements of market return volatility. Some studies have concluded that there is a strong relationship between exchange rate movement and stock market returns volatility, while others have not. Specifically, the information content of exchange rate movement would be carried to the security's business.

### **2.3.2 Inflation Rate**

The effects of inflation on the economy are diverse and can be both positive and negative. The negative effects are however most pronounced and comprise a decrease in the real value of money as well as other monetary variables over time. As a result, uncertainty over future inflation rates may discourage investment and savings, and if inflation levels rise quickly, there may be shortages of goods as consumers begin to hoard out of anxiety that prices may increase in the future.

### **2.3.3 Money Supply**

Money supply refers to the total amount of money in circulation or in existence in a country. There are several standard measures of the money supply, including the monetary base, M1, and M2. The monetary base is defined as the sum of currency in circulation and reserve balances (deposits held by banks and other depository institutions in their accounts at the Federal Reserve).

### **2.3.4 Real Output**

Real Gross Domestic Product (real GDP) is a macroeconomic measure of the value of economic output adjusted for price changes (i.e., inflation or deflation). This adjustment transforms the money-value measure, nominal GDP, into an index for quantity of total output.

## **2.4 Empirical Review**

Garcia and Liu (1999) used pooled data from fifteen industrial and developing countries from 1980 to 1995 to examine the macroeconomic determinants of stock market development, particularly market capitalization. Their study established that that: real income, saving rate, financial intermediary development, and stock market liquidity are important determinants of stock market capitalization. Also, they established that macroeconomic volatility does not affect stock market performance. Further, they established that stock market development and financial intermediary development are complements but not substitutes.

Maku and Atanda (2010) conducted a critical analysis of the long-run macroeconomic determinants of stock market performance in Nigeria between 1984 and 2007. The Augmented Engle-Granger Co-integration test result revealed that the stock market performance in Nigeria is mainly affected by macroeconomic forces in the long-run. However, the empirical analysis showed that the Nigerian Stock Exchange all share index is more responsive to changes in exchange rate, inflation rate, money supply, and real output. The study recommended that investors should pay close attention to exchange rate, inflation, money supply, and economic growth rather than Treasury bill rate in the long-run in their investment decision.

Ting et al. (2012) examined the relationships between Kuala Lumpur Composite Index (Malaysia) and four macroeconomic variables from January 1992 to December 2011, which contains a monthly data set of 240 observations. Using Ordinary Least Squares (OLS), the results indicated that KLCI is consistently influenced by interest rate, money supply and consumer price index in the short run and long-run. For the crude oil price, the study established that there is a long run linkage with KLCI but it turns to be insignificant in the short run.

Mehwish (2013) conducted a study on Determinants of Stock Market Performance in Pakistan. The data was analysed quantitatively through regression analysis using E-views. Using a time series data for the period between 1988 and 2008, the study established that there is a negative relationship between real interest rate and stock market performance, whereas the banking sector development has no significant impact on stock market performance.

Jahur et al. (2014) studied determinants of stock market performance in Bangladesh. The study used secondary data sources, and applied descriptive measures and linear regression model to analyse the data. The study found that all macro-economic variables such as Consumer Price Index, Interest Rate and Exchange Rate have significant impact on the stock market performance. They concluded with some pragmatic policy measures such as sound macro-economic policy are essential for monitoring interest rate and exchange rate movement.

Using secondary data for the period 2005 and 2009 from NSE; Aduda, Masila, and Onsongo (2012) investigated the determinants of stock market development. The regression results found that, macro-economic factors such as stock market liquidity, institutional quality, income per capita, domestic savings and bank development are important determinants of stock market development in the Nairobi Stock Exchange. The regression analysis reported no relationship between stock market development and Macro-economic stability - inflation and private capital flows. The results also show that institutional quality represented by law and order and bureaucratic quality, democratic accountability and corruption index are important determinants of stock market development because they enhance the viability of external finance. They concluded that political risk is an important determinant of stock market development.

Mongeri (2011) examined the impact of foreign exchange rates and foreign exchange reserves on stock markets performance at NSE using monthly time series data of NSE share index, foreign exchange rates and reserves for the period 2003-2010. The study established that foreign exchange rates had negative significant impact on stock market

performance. Also, the study established that foreign exchange reserves had positive significant impact on stock market performance. The study also revealed that there is no significant relationship between Foreign exchange rates and foreign exchange reserves.

Songole (2012) examined the relationship between selected macroeconomic variables and stock return at the Nairobi securities exchange. The study focused on Consumer price index (CPI), market interest rate, Industrial Production Index (IPI) and Foreign exchange rate (FEX) using monthly data for a nine-year period between January 2003 and December 2011. The study concluded that market interest rate, consumer price index and exchange rate have a negative relationship with stock return, while industrial production index exhibited a positive relationship.

Ochieng and Adhiambo (2012) contributed to DBA Africa Management Review 2012 with an article, which investigated the relationship between macroeconomic variables on NSE All share index (NASI) seeking to determine whether changes in macroeconomic variables can be used to predict the future NASI. Three key macroeconomic variables included lending interest rate, inflation rate and 91 day Treasury bill (T bill) rate. The secondary data was for the periods March 2008 to March 2012. They established that 91 – day T bill rate has a negative relationship with the NASI while inflation has a weak positive relationship with the NASI. Based on these findings, the study recommended a closer monitoring of the macroeconomic environment since their changes have an effect on the stock market performance.

Kimani and Mutuku (2013) investigated the impact of inflation, Central Depository System (CDS) and other macroeconomic variables (including deposit rate, gross domestic product terms of trade and the net effective exchange rate) on the Nairobi stock market performance using quarterly data from the Central Bank of Kenya (CBK) and the Nairobi Stock Exchange (NSE) for the period December 1998 to June 2010. The cointegrating model showed that there is a negative relationship between inflation and stock market performance in Kenya. In addition the CDS is shown to have a positive and significant impact on the stock market performance.

## **2.5 Summary of Literature Review**

Garcia and Liu (1999) established that macroeconomic volatility does not affect stock market performance, while Maku and Atanda (2010) revealed that the stock market performance in Nigeria is mainly affected by macro-economic forces in the long-run in Nigeria. Ting et al. (2012) established that Kuala Lumpur Composite Index is consistently influenced by interest rate, money supply and consumer price index in the short run and long-run in Malaysia. Mehwish (2013) established that there is a negative relationship between real interest rate and stock market performance in Pakistan. Jahur et al. (2014) established macro-economic variables such as CPI, Interest Rate have significant impact on the stock market performance in Bangladesh.

A regression analysis conducted by Aduda, Masila, and Onsongo (2012) reported that there is no relationship between stock market development and Macro-economic stability - inflation and private capital flows. Mongeri (2011) established that foreign exchange



rates have a negative significant impact on stock market performance. Also, Songole (2012) established that market interest rate, consumer price index and exchange rate have a negative relationship with stock return. Ochieng and Adhiambo (2012) established that 91 – day T-bill rate has a negative relationship with the NASI while inflation has a weak positive relationship with the NASI. Kimani and Mutuku (2013) showed that there is a negative relationship between inflation and stock market performance in Kenya.

Empirical literatures by different authors reveal that some authors have established a positive relationship between various macro-economic variables and stock market performance, while others have established otherwise. Studies conducted both locally made different conclusions. While some authors established a weak relationship, others found a strong relationship. Yet again, some authors established relationships only in the long-run, while others established long-run and short-run relationship.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter discusses the methodology used to conduct the study. The chapter explains the methods to be used to collect secondary data necessary for the study. The chapter discusses the research design used, the target population and data collection methods. Data analysis has also been discussed in detail with the researcher explaining the model and statistical tools that will be used to analyse the data.

### **3.2 Researcher Design**

Research design refers to a detailed outline on how the research will take place. It specifies the methods and procedures that will be used to collect and analyse data (Borg *et al.* 2007). The study followed a descriptive research design. Descriptive research design is a statistical method that quantitatively synthesizes the empirical evidence of a specific field of research. The study sought to investigate the determinants of stock market performance in Kenya. The researcher selected a case study of the Nairobi Securities Exchange in Kenya.

Flick (2009) notes that Descriptive research design has become widely accepted in the field of finance and economics since it is proving to be very useful in policy evaluations. The study will adopt the descriptive research design. According to Groves (2004) descriptive technique gives accurate information of persons, events or situations.

Descriptive research design was used to describe the performance of the stock market in the previous years.

### **3.3 Target Population**

The target population refers to the entire group of people, events or things that the researcher intends to investigate (Borg *et al.* 2007). The target population for the study included the companies listed in the Nairobi Stock Exchange market as of July 1<sup>st</sup> 2014. The study targeted the 20 companies listed and included in the Nairobi Securities Exchange 20 Share Index as per July 1<sup>st</sup> 2014.

### **3.4 Data Collection**

Data collection is the process of gathering and measuring information in order to be able to answer questions that prompted the undertaking of the research (Flick, 2009). Secondary data was obtained from Nairobi Securities Exchange. Secondary data refers to the information that has been collected by other individuals (Cooper and Schindler, 2006).

For the purpose of this study, the data was obtained for a period of 13 years, spanning between years 2000 – 2013. Specifically, the study used the NSE 20-Share Index as the dependent variable to measure the stock market performance.

The researcher obtained data to study the variables which included money supply, inflation rate and real output. For the purpose of the study, the secondary data was obtained from Kenya National Bureau of Statistics (KNBS) website (Consumer Price

Index CPI), Central Bank of Kenya (money supply M3), International Monetary Fund IMF website (Kenyan GPD per capita), and the Nairobi Securities Exchange NSE (NSE 20 Share Index).

### **3.5 Data Analysis**

According to Mugenda and Mugenda (2003) data must be cleaned, coded and properly analysed in order to obtain meaningful information. Secondary data gathered was organized in spreadsheets for the purpose of analysis. The data was then analysed using Statistical Package for Social Sciences (SPSS). The results of the analysis was organized in tables and graphs and then used to answer the study questions.

#### **3.5.1 Analytical model**

For the purpose of this study, the unit of analysis was Nairobi Securities Exchange 20 share Index obtained from Nairobi Securities Exchange. Other variables was selected macro-economic variables which includes; money supply, inflation rate and real (GDP).

The study analytical model is depicted by the regression model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu_i$$

Where; Y – Average Annual Nairobi Securities Exchange 20 Share index

X<sub>1</sub> - Inflation rate, measured as average annual consumer price Index

$X_2$  - Money Supply, measured as average yearly monetary base (M3); the sum of currency in circulation, and reserve balances (deposits held by banks and other depository institutions in their accounts at the Federal Reserve).

$X_3$  - Real GDP, measured as average annual Real Output per Capita; the Real Gross Domestic Product (real GDP a macroeconomic measure of the value of economic output adjusted for price changes (inflation or deflation) per head.

$\beta$  – Determines the relationship between the independent variable X and the dependent or Gradient/Slope of the regression measuring the amount of the change in Y associated with a unit change in X.

While  $\mu_i$  – Normally distributed error term

### **3.5.2 Test of Significance**

The study sought to establish the determinants of stock market performance in Kenya. The researcher used inferential statistics such as the Pearson Product Moment correlation coefficient  $R^2$  and the coefficient of determination R of the data set as well as p-value and F-test statistics.

## **CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION**

### **4.1 Introduction**

This chapter provides the details as regards data analysis results and discussions of the study findings as set out in the research objective and research methodology. The study sought to establish the macro-economic determinants of stock market performance in Kenya: case of Nairobi Securities Exchange.

### **4.2 Response Rate**

The obtained data spanned the period between years 2000 to 2013. The study targeted a sample of 20 companies composing the NSE 20-Share Index as of 1<sup>st</sup> July 2014. The study obtained all the required data regarding all the 20 companies. Therefore, the study attained 100% return rate.

### **4.3: Data Validity**

Data validity refers to the correctness and reasonableness of the data. Soundness of data requires that all data sets fall within the same range as well as that the numeric should be digits. The data for this study was valid in that the data range was for the period of 13 years. The data was obtained from credible sources including NSE, CBK and KNBS. Furthermore, the data sets were all numeric. Moreover, the data sets ranged for the same period 2000-2013.

### **4.4 Descriptive Statistics**

The study analysis established the descriptive statistics shown in table 4.1 below.

**Table 4.1: Descriptive Statistics**

	NSE 20 Share Index	Consumer Price Index	Money Supply (M3)	Real GDP Per Capita
Mean	3488.8664	75.6143	10451.8114	35274.4214
Median	3384.3100	66.7000	10502.5600	34948.0000
Mode	1355.05 <sup>a</sup>	38.10 <sup>a</sup>	4608.72 <sup>a</sup>	31825.00 <sup>a</sup>
Std. Deviation	1376.74292	33.06678	4685.27116	2744.55174
Variance	1895421.060	1093.412	21951765.797	7532564.246

**Source: Research Findings**

The study results revealed that money supply varied mostly followed by real GDP per capita, followed by NSE 20-Share Index followed by consumer price index as shown by their corresponding standard deviations in table 4.1 above. Also, the data was not exactly normally distributed since their respective mean, mode and median was not exactly the same, but the data was sufficiently appropriate for the purpose of the study.

#### **4.5 Correlation Analysis**

The study analysis conducted correlation analysis. Table 4.2 shows the correlation relationship between the study variables.

**Table 4.2: Correlation Analysis**

	NSE 20 Share Index	Consumer Price Index	Money Supply (M3)	Real GDP Per Capita
NSE 20 Share Index	1.000	.536	.606	.545
Consumer Price Index	.536	1.000	.948	.945
Money Supply (M3)	.606	.948	1.000	.934
Real GDP Per Capita	.545	.945	.934	1.000

**Source: Research Findings**

The correlation analysis revealed that the data sets were highly correlated with each other. For example, NSE 20-Share index was found to correlate much more with Money Supply as compared with the rest of the variables. Also notable was that CPI was highly correlated with both money supply, and real GDP per capita. Also, money supply was highly correlated with CPI, and real GDP per capita. In general, the data sets were highly correlated meaning a change of one of the variable would result to a substantial change on the other variables which is expected for such macro-economic variables.

#### **4.6 Regression Analyses and Hypothesis Testing**

In order to establish whether there exists a relationship between Nairobi Securities performance, the researcher conducted a regression analysis where the NSE 20Share Index was regressed against the three predictor variables; Consumer Price Index (CPI), Money Supply (M3), and real GDP per Capita.

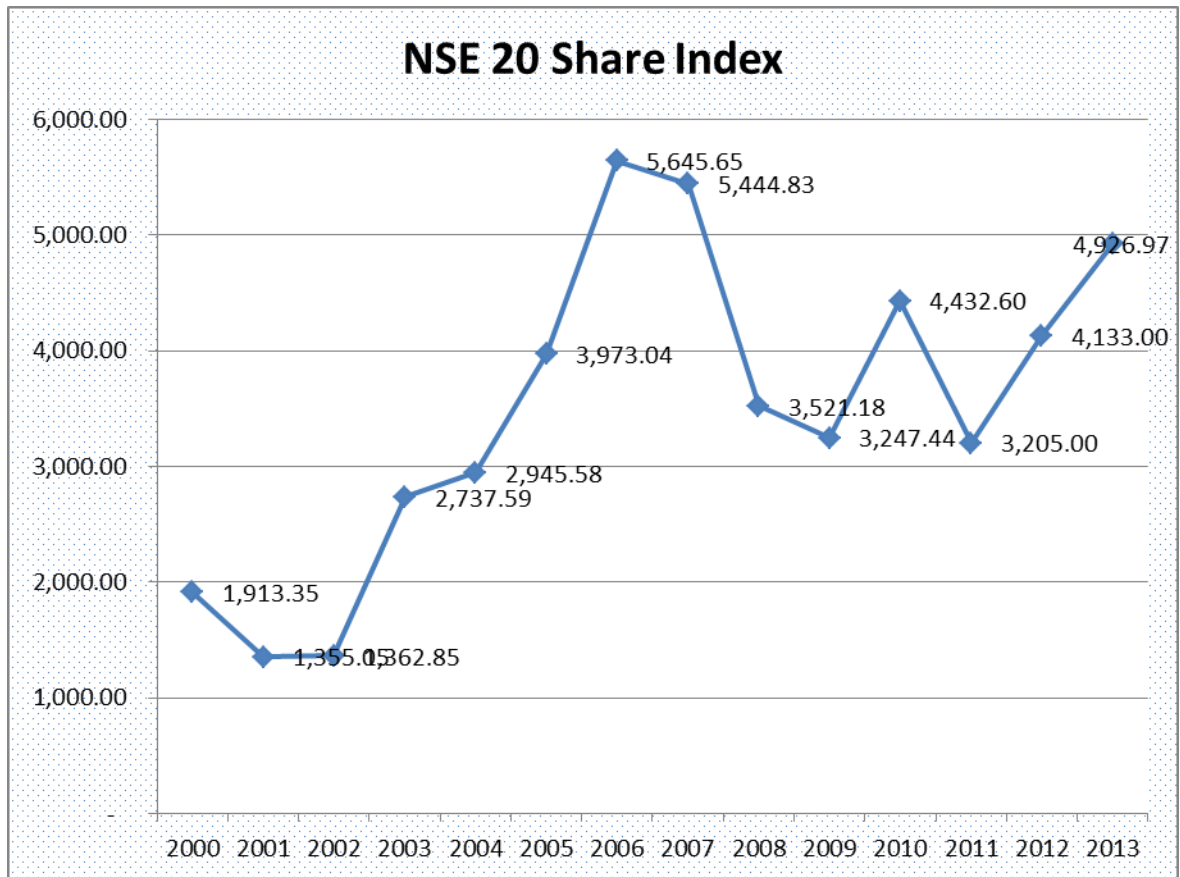
However, before the regression analysis, the researcher sought to establish the trend of the four data sets in order to establish the trend of the involved macro-economic variables. Therefore, the researcher used line graphs to depict the trend of the involved variables as shown by figure 4.1, 4.2, 4.3, and 4.4 shown in the ensuing part of the analysis.

##### **4.6.1 NSE 20 Share Index**

The study sought to establish the trends of the NSE 20 share index and established the trend as depicted by figure 4.1 below. From the diagram, the findings reveal that NSE 20 Share index has fluctuated each year throughout the study period.



**Figure 4.1: Trend of NSE 20 Share Index**



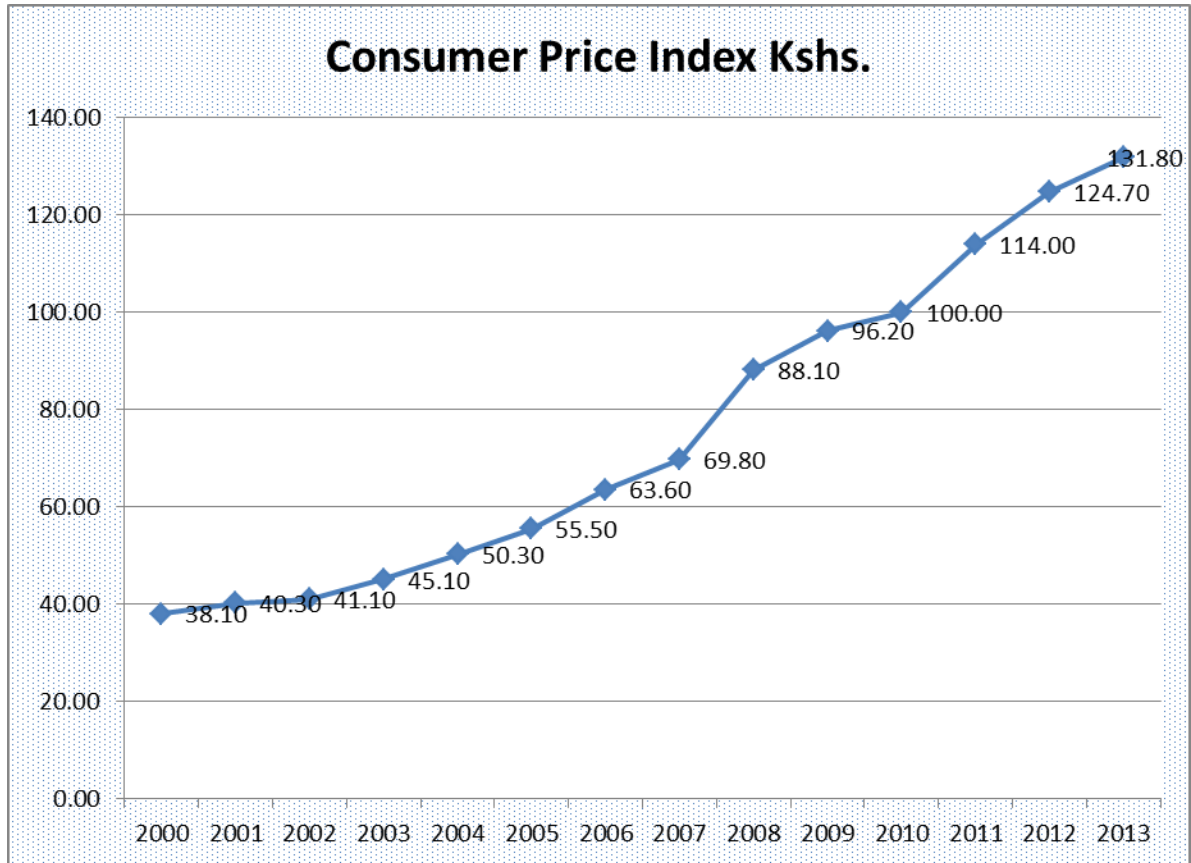
**Source: Nairobi Securities Exchange**

The study established that the average annual NSE index has fluctuated throughout the period. The figure fell through the years 2000 to 2002, then started to rise up to the year 2006, then fell through the years 2007-2009. Then, it rose in the year 2010, but fell in the year 2011 after which it rose again.

#### 4.6.2 Consumer Price Index

The study sought to establish the trend of consumer price index throughout the study period and established the trend as shown in figure 4.2 below;

**Figure 4.2: Consumer Price Index**



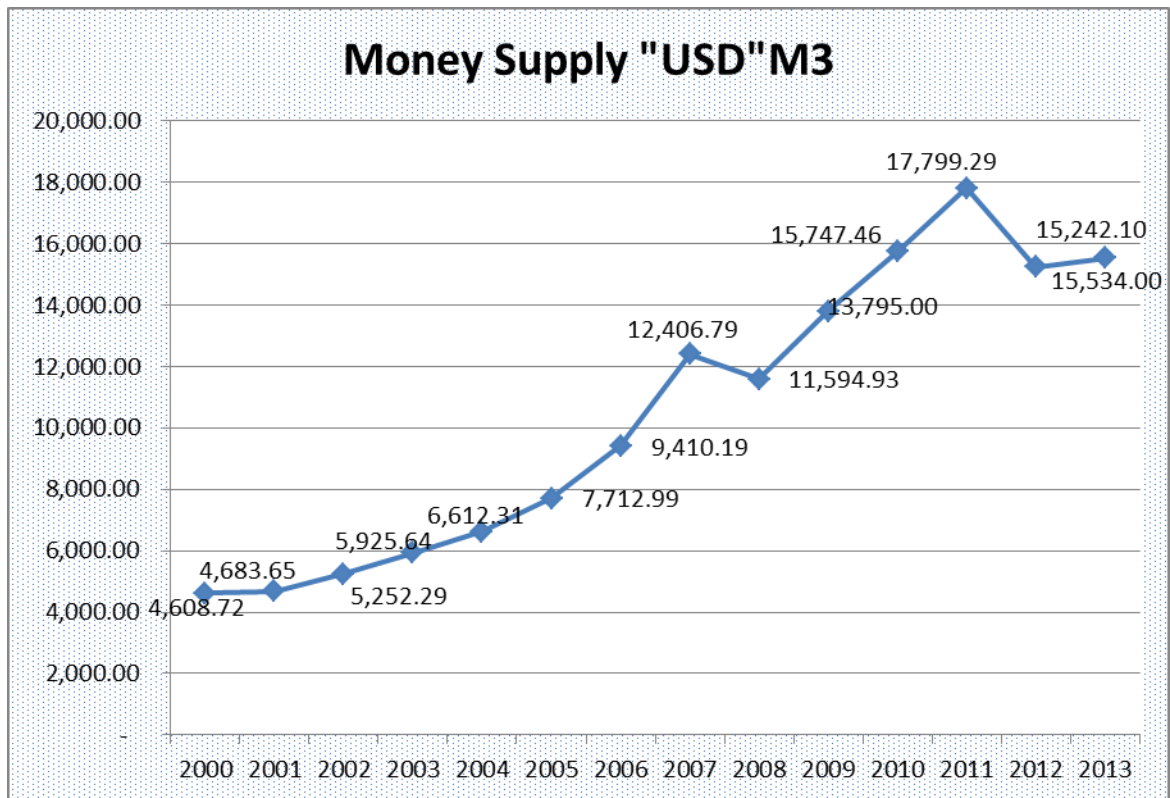
**Source: Kenya National Bureau of Statistics**

The study results as is depicted by figure 4.2 above established that the consumer price index has been growing each year and was steeper during the period 2007-2008 as shown in the figure above.

### 4.6.3 Money Supply “M3”

The study sought to establish the trend of the money supply in the country. A graph of the money supply (M3) in US Dollar was drawn to show the relationship. The findings were as shown in figure 4.3 below;

**Figure 4.3: Money Supply**



**Source: International Monetary Fund (IMF)**

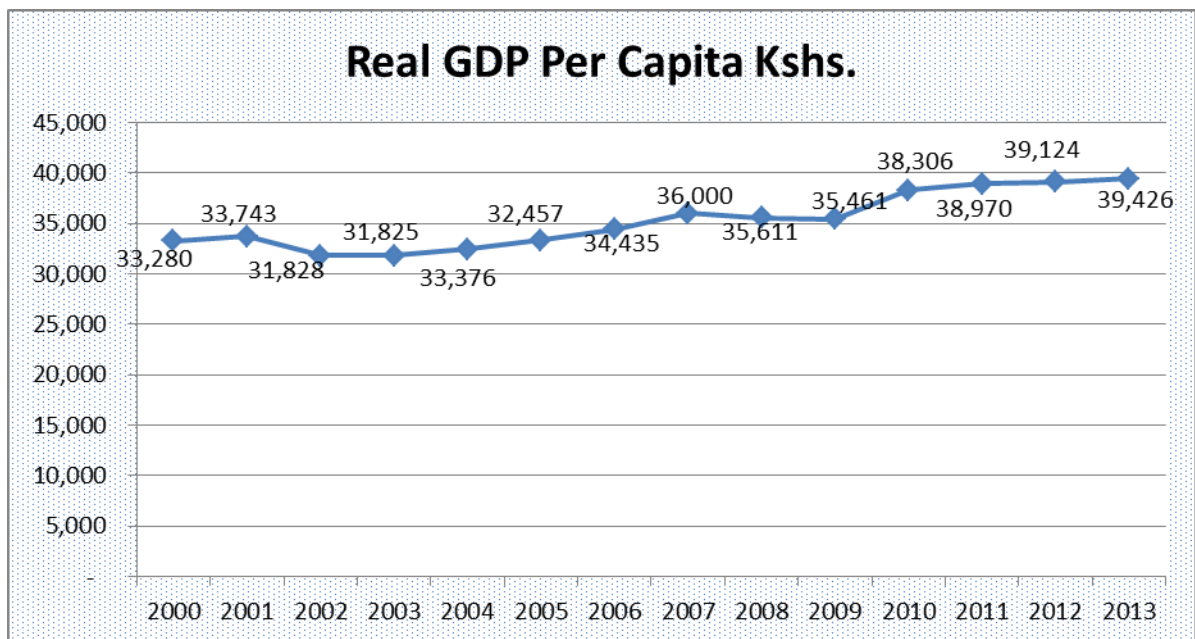
The study results revealed that the amount of money supply in in the country (US Dollars) has grown throughout the study period. Notably, the growth in the amount of money in circulation rose more steeply during the period 2006-2007, but fell down in the

year 2008, after which it increased steeply up to year 2010, when it fell again up to the year 2012, but slightly rose again in the year 2013.

#### 4.6.4 Real Gross Domestic Product (GDP)

The study further sought to determine the trend of the real GDP. A graph of the real GDP per capita was drawn and was seen to exhibit the fluctuations as shown in the figure 4.4 below.

**Figure 4.4: Real GDP per Capita**



**Source: Kenya National Bureau of Statistics**

The study established that gross domestic product per capita generally fluctuated through the period exhibiting a sluggish growth as shown in the figure 4.4 above. Further, the results revealed that the growth declined greatly during the period 2001-2003 and 2007-2009.

#### 4.6.5 Model Summary Statistics

The study sought to establish the nature of the relationship (strength and the direction of the relationship) that exists between the study variables. The regression analysis results were as shown in table 4.1 below.

**Table 4.3: Model Summary Statistics**

Model Summary <sup>b</sup>						
R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
				R Square Change	F Change	df1
.618 <sup>a</sup>	.382	.197	1234.01908	.382	2.060	3
a. Predictors: (Constant), Consumer Price Index (CPI) Kshs., Money Supply (M3), and real GDP per Capita Kshs.. b. Dependent Variable: NSE 20-Share Index						

**Source: Research Findings**

The study results revealed that there is a weak positive relationship between the selected macro-economic variables and the NSE 20-Share Index as depicted by coefficient of determination (R) of 0.618, and Correlation Coefficient (R- Square) of 0.382. Therefore, the selected macroeconomic variables Consumer Price Index (CPI), Money Supply (M3), and real GDP per Capita do command an influence equivalent to 38.2% only of the changes in the NSE 20-Share Index meaning that many other variables apart from the above mentioned do influence NSE 20share index.

#### 4.6.6 Analysis of Variance

The study sought to establish the significance of the model established through the regression analysis. The regression analysis produced the statistics as shown in table 4.3 below.

**Table 4.4: Analysis of Variance**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9412442.936	3	3137480.979	2.060	.169 <sup>b</sup>
	Residual	15228030.846	10	1522803.085		
	Total	24640473.782	13			

a. Dependent Variable: NSE 20 Share Index  
b. Predictors: (Constant), Real GDP Per Capita, Money Supply (M3), Consumer Price Index.

#### Source: Research Findings

The regression analysis obtained P-value test for significance equal to 0.169 (which is greater than 0.05) depicting that a possible model between the NSE 20-share and the selected predictor variables is statistically insignificant. By use of the F-table, the F: 10, 3; 0:05 was 8.79 which was greater than the F-test statistic = 2.060, determined through the analysis and shown in table 4.3 above which indicated that the model was statistically insignificant.

#### 4.6.7 Model Coefficients

The results of the analysis obtained the model coefficients and corresponding statistics as shown in table 4.2 below.

**Table 4.5: Model Coefficients**

Coefficients <sup>a</sup>					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1484.895	11996.778		.124	.904
Consumer Price Index	-16.028	38.079	-.385	-.421	.683
Money Supply (M3)	.281	.246	.956	1.142	.280
Real GDP Per Capita	.008	.409	.016	.019	.985

**Source: Research Findings**

The results of the analysis established that the relationship between NSE 20-Share Index and the predictor variables; Consumer Price Index, Money Supply (M3), and Real GDP per Capita can be expressed using the following regression model;

$$Y = 1484.895 - 16.028X_1 + 0.281X_2 + .008X_3 + \mu e.$$

where ; Y is the NSE 20-Share Index,  $X_1$  is the Consumer Price Index,  $X_2$  is the Money supply M3, and  $X_3$  is the real GDP per capita. From the regression model obtained above, holding all the other factors constant, NSE 20-Share would be 1484.895. A unit change in each of the predictor variables would cause a change in NSE 20-Share index by the rate corresponding to the coefficient related with each variable as indicated in the model above.

Also, there exists a weak insignificant relationship between each of the predictor variables and NSE 20-Share index as the corresponding P-Values for each of the variables were larger than 0.05 as shown in the table above.

#### **4.7 Discussion of Research Findings**

The study results have revealed that both the NSE 20-Share index and the selected macro-economic variables; CPI, money supply, and real GDP per capita have been growing throughout the period in general. As shown in figure 4.1, the study results revealed that the NSE 20-Share index fell during the years 2000 to 2002, then started to rise up to the year 2006, then fell through the years 2007-2009.

Also, the study results as is depicted by figure 4.2 above established that the consumer price index has been growing each year and was steeper during the period 2007-2008 as shown in figure 4.2. Further, the study results revealed that the growth in money in supply did not only decline but the quantity of money in circulation declined during the period 2007-2008 despite the fact that it had grown since the year 2000. Also, the growth in real GDP per capita decreased more during the periods 2001-2002 and 2007-2009.

Kenyan held elections during the years 2002, 2007, and 2013 which were accompanied by political campaigns. In particular, the election held in December 2007 was marred by political upheavals which temporarily deteriorated the economic performance. Therefore, the study results established that both the NSE performance and the selected macro-economic variables experienced some deterioration just before, during, or/and immediately after the electioneering periods. Consequently, the study confirms that the political climate in a country can influence major macro-economic variables as well as financial markets.



The study results revealed that there is a weak positive relationship between the selected macro-economic variables and the NSE 20-Share Index as depicted by coefficient of determination (R) of 0.618, and Correlation Coefficient (R- Square) of 0.382 depicting that there exists a weak positive relationship between macro-economic variables and NSE 20 Share Index.

The established regression model however, indicated that CPI has an inverse relationship with the NSE 20-Share Index as depicted by the fact its associated coefficient was negative, but the coefficients corresponding to money supply and real GDP per capita were positive. Nonetheless, there exists a weak insignificant relationship between each of the selected macro-economic variables and NSE 20-Share index since the corresponding P-Values for each of the variables were larger than 0.05 as shown in the table above.

Further, the obtained P-value for the model in general was 0.169 (which is greater than 0.05) depicting that the model between the NSE 20-share Index and the selected predictor variables is statistically insignificant. This was supported by the F-test statistic from the F-table at F: 10, 3; 0.05 which was 8.79 which was greater than the F-test statistic = 2.060, determined through the analysis and shown in table 4.3 above which indicated that the model was statistically insignificant.

The results partly agreed with the conclusions by Aduda, Masila and Onsongo (2012) reported that there is no relationship between stock market development and Macro-economic stability - inflation and private capital flows. Also, the conclusion concurs with Ting et al. (2012) who established that Kuala Lumpur Composite Index is consistently

influenced by interest rate, money supply and consumer price index in the short run and long-run in Malaysia. However, this conclusion disagrees with the posits of Jahur et al. (2014) who established macro-economic variables including Consumer Price Index and Interest Rate have significant impact on the stock market performance in Bangladesh.

The results concur with the findings of Kimani and Mutuku (2013) who established that there is a negative relationship between inflation and stock market performance in Kenya. The study however disagrees with Ochieng and Adhiambo (2012) who determined that inflation has a weak positive relationship with the Nairobi All Share Index (NASI).

This conclusion agrees with the revelations of Maku and Atanda (2010) who revealed that the stock market performance in Nigeria is mainly affected by macro-economic forces in the long-run in Nigeria. It however partly disagrees with the conclusion of Garcia and Liu (1999) who established that macroeconomic volatility does not affect stock market performance.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter provides the summary, conclusions and recommendations of the study as per the study objective.

### **5.2 Summary of Findings**

The study sought to establish the determinants of stock market performance and used Nairobi Securities Exchange. The study was guided by an objective; to examine the effect of the selected macro-economic determinants of stock market performance in Kenya. The selected macro-economic variables included inflation rate, money supply and real GDP per capita.

The study followed descriptive research design and used secondary data. The data spanned the period between 2000 and 2013. The data used for the analysis was the average annual figures and was obtained from; Nairobi Securities Exchange (NSE 20-Share), Central Bank of Kenya (CPI), Kenya National Bureau of Statistics (GDP per Capita) and International Monetary Fund website (Money Supply M3). The data was analysed using SPSS version 20.

The study results established that NSE 20-Share Index (used to measure stock market performance) as well as CPI (used to measure inflation), money supply (used M3), and

GDP per Capita deteriorated either just before, during and immediately after the general elections.

The regression analysis obtained Coefficient of determination (R), Correlation Coefficient (R-Square), P-Value and F-test statistics which were; 0.618, 0.382, 0.169 and 2.060 respectively. Since R was positive (0.618) the relationship between the Stock Market Performance and the macro-economic variables was positive. Since, R-Square was way below 0.75 as it was (0.382) the relationship between NSE performances as measured by NSE 20-Share Index is very weak. However, the study results established that the relationship between inflation as measured by CPI and Stock Market Performance is inverse as the corresponding coefficient in the model was negative.

Also, since P-Value (0.169) was greater than 0.05, the established model describing the relationship between the study variables is statistically insignificant. This was supported by the F-test as the obtained test Statistics from the F-table at F10,3:0.05 was 8.79 which was greater than the F-test statistic 2.060, determined through the analysis. Furthermore, P-Values associated with each of the determinants variables were all greater than 0.05 depicting that the selected macro-economic variables were individually statistically insignificant in predicting the stock market performance.

### **5.3 Conclusion**

This study concludes that there is a weak positive relationship between the selected macro-economic variables (inflation, money supply, and GDP per capita) together and stock market performance. Also, this study concludes that the relationship between

inflation and stock market performance is inverse but insignificant. Further, the study concludes that the Money Supply and GDP per Capita have a positive but weak and insignificant relationship with stock market performance.

#### **5.4 Recommendations**

The study recommends that the central bank of Kenya (CBK) and other regulators should plan in advance and influence the macro-economic variables such as inflation, money supply on the right direction. For instance the economy should have sufficient money supply to ensure that there is enough money to conduct trade in the economy.

Also, inflation should be cubed as it negatively stock market performance. However, the government should aim to grow the country's GDP as it positively influences stock market performance.

The study established that all the selected macro-economic variables worsened just before, during or/and the immediate year following elections. The study recommends that the investment community should plan for the adverse effects of the changes before, during, and immediate years following an election. The situation was worse during the period 2007-2010. Notably, Kenyan held national elections in the year 2007 and was marred by election mal-practices followed by a post-election violence. The situation in the country during the years 2008 worsened economic stock market performance as well as the selected macro-economic variables.

The study further recommends that the government should ensure that contestants do not engage in bad politicking as this may deteriorate the effect of macro-economic variables and investments in real estate and possibly other sectors. Furthermore, the electoral body should tighten controls of politics and quality of election results.

### **5.5 Limitations of the Study**

The study utilized secondary data, which had already been obtained and was in the public domain, unlike the primary data which is first-hand information. Possible errors in the process of measurement or during recording may have been carried along into the research results.

Also, the researcher was overwhelmed by the study because he had to conduct the study alongside official duty at the place of work and other personal and social commitments. Moreover, the study had to be conducted within a short period, hence the researcher had to work long-hours into the night. These made the researcher exhausted at times and could possibly affect the input into the study.

However, these factors were catered for by the fact that the researcher was carefully guided by the strong university academicians including the supervisor, moderator, and the project proposal discussion team.

## **5.6 Suggestions for Further Studies**

The study suggests that further readings should explore on the specific factors that affect each of the study variables. For instance, further studies should aim to establish the determinants of money supply, CPI, and real GDP per capita.

Also, further studies can be conducted to establish other macro-economic variables as well as other factors that influence stock market performance. Establishing other macro-economic factors that influence stock market performance such as exchange rate inflations, international remittances etc can help the regulators to safeguard the market performance so that appropriate results are obtained for the good of investors and the listed corporate bodies.

Also, future studies should include comparison of a simultaneous comparison of the effect of the macro-economic variables on stock market performance. Comparison of different markets can help reach concrete conclusions as regards the subject of the study.

## REFERENCES

- Aduda, J., Masila, J. M., and Onsongo, E. N. (2012). The Determinants of Stock Market Development: The Case for the Nairobi Stock. *International Journal of Humanities and Social Science*, 2(9), 214-227.
- Barako, D. G. (2007). Determinants of voluntary disclosures in Kenyan Companies Annual Reports. *African Journal of Business Management*, 1(5), 113-28.
- Buigut, K., Soi, N., Koskei, I., and Kibet, J. (2013). The Effect of Capital Structure on Share Price on Listed Firms in Kenya. A Case of Energy Listed Firms. *European Journal of Business and Management*, 5(9).
- Cheluget, J. K. (2008). *Investor's Demand for IPOs and First Day Performance: Evidence from Nairobi Stock Exchange*. Nairobi: University of Nairobi.
- Cooper, D. R., and Schindler, P. S. (2006). *Business Research Method* (9th ed.). Boston: McGraw-Hill Irwin.
- Eita, J. H. (2011). *Determinants of Stock Market Prices in Namibia. Working Paper 209 Monash University*. Monash University.
- Fama, E. F. (2000). *Short-Term Interest Rates as Predictors of Inflation; The Debt Market*. Cheltenham: Elgar.
- Flick, U. (2009). *An Introduction to Qualitative Research* (4th ed.). SAGE Publications: California.



- Garcia, V. F., and Liu, L. (1999). Macroeconomic Determinants of Stock. *Journal of Applied Economics*, 2(1), 29-59.
- Garza-Garcia, J., and Yu, Y. (2010). *International Determinants of Stock Market Performance in China: A Cointegration Approach*. Working Paper 03/10. University of West of England.
- Gatua, F. K. (2013). *Analysis of Share Price Determinants at Nairobi Securities Exchange*. Unpublished MBA Project of the University of Nairobi.
- Groves, R. E. (2004). *Survey Methodology*. SAGE Publications: California.
- Gupta, J. P., Chevalier, A., and Sayekt, F. (2008). *The Causality Between Interest Rate, Exchange Rate and Stock Price in Emerging Markets: The Case of the Jakarta Stock Exchange*. Independent Researcher.
- Jahur, M. S., Quadir, S. M., and Khan, M. A. (2014). Determinants of stock market performance in Bangladesh. *Indonesian Management and Accounting Research*, 13(1), 16-28.
- Karitie, D. W. (2010). *Long-run Performance of Initial Public Offerings: Evidence from the NSE*. Unpublished MBA Project, University of Nairobi.
- Keynes, J. M. (1930). *Treatise on Money and the General Theory of Employment, Interest and Money 1927 to 1939*. Maynardkeynes.org.

- Kimani, D. K., and Mutuku, C. M. (2013). Inflation Dynamics on the Overall Stock Market Performance: The Case of Nairobi Securities Exchange in Kenya. *Economics and Finance Review*, 2(11), 1-11.
- Kipngetch, T. J., Kibet, B. J., Guyo, S. A., and Kipkoskey, B. J. (2011). *Determinants of Initial Public Offer Pricing in Kenya*. London: The Centre for Innovations in Business and Management Practice.
- Maku, O. A., and Atanda, A. A. (2010). Determinants of stock market performance in Nigeria: long-run analysis. *Journal of Management and Organizational Behavior*, 1(3), 5-16.
- Mehwish, Z. (2013). Determinants of Stock Market Performance in Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 4(5), 1017-18.
- Mongeri, O. (2011). *The Impact of Foreign Exchange Rates and Foreign Exchange Reserves on the Performance of Nairobi Stock Exchange Share Index*. Nairobi: University of Nairobi.
- Mugenda, A., and Mugenda, O. (2003). *Mugenda, A. and Mugenda, O. (2003). Research Methods: Quantitative and Qualitative Approaches*. Nairobi: Africa Centre for Technology Studies (ACTS).
- Mwaniki, C. (2014). *Big brokers in earnings race as NSE trades Sh100bn*. Business Daily.

- Ndatimama, E. (2008). *Performance of Initial Public Offerings: The Evidence from Nairobi Stock Exchange*. Nairobi: University of Nairobi.
- Ngahu, J. M. (2006). *Book Value Per Share Issue Price and 1st Day Trading Prices of IPOs at NSE*. Nairobi: University of Nairobi.
- Ngugi, W. R. (2003). *Development of the Nairobi Stock Exchange: A Historical Perspective, KIPPRA Discussion Paper No. 27*. Nairobi: Kenya Institute for Public Policy.
- Ochieng, D. E., and Adhiambo, E. O. (2012). The Relationship between Macro Economic Variables and Stock Market Performance in Kenya. *DBA Africa Management Review 2012, Vol 3 No 1 pp., 3(1), 38-49*.
- Osoro, C. (2013). Investors Perspectives on the NASI AND THE NSE 20 Share Index as Performance Measurement Indicators at the Nairobi Securities Exchange in Kenya. *International Journal of Humanities and Social Science, 3(18)*.
- Simiyu, E. N. (2008). *Pricing and Performance of Initial Public Offering (IPO): A Comparison Between State Owned Enterprises and Privately Owned Enterprises at the NSE*. Nairobi: University of Nairobi.
- Singh, A. (1997). Stock Markets, Financial Liberalization and Economic Development. *Economic Journal, 107(1), 771-82*.

- Songole, R. K. (2012). *The Relationship between Selected Macroeconomic Variables and Stock Return at the Nairobi Securities Exchange*. Nairobi: University of Nairobi.
- Thuo, G. W. (2009). *The Short-run Performance of Initial Public Offerings in the NSE*. Nairobi: University of Nairobi.
- Ting, H. L., Feng, S. C., Weng, T. W., and Lee, W. K. (2012). *Macroeconomic Determinants of the stock Market Return: The Case in Malaysia*. Kuala Lumpur: Universiti Tunku Abdul Rahman.
- Waweru, J. M. (2010). *Reaction of Share Prices to Issue of IPOs from the NSE: Empirical Evidence*. Nairobi: University of Nairobi.
- Yartey, C. A., and Adjasi, C. K. (2007). *Stock Market Development in Sub-Saharan Africa: Critical Issues and Challenges*. IMF Working Paper No. 07/209. IMF.

## APPENDICES

### Appendix I: NSE Listed Companies as at July 1<sup>st</sup>. 2014

1	Eaagads Ltd Ord	31	Uchumi Supermarket Ltd Ord
2	Kakuzi Ord	32	Athi River Mining Ord
3	Kapchorua Tea Co. Ltd Ord Ord	33	Bamburi Cement Ltd Ord
4	Limuru Tea Co. Ltd Ord	34	Crown Berger Ltd Ord
5	Rea Vipingo Plantations Ltd Ord	35	E.A.Cables Ltd Ord
6	Sasini Ltd Ord	36	E.A.Portland Cement Ltd
7	Williamson Tea Kenya Ltd Ord	37	KenGen Ltd Ord
8	Car and General (K) Ltd Ord	38	KenolKobil Ltd Ord
9	CMC Holdings Ltd Ord	39	Kenya Power and Lighting Co Ltd
10	Marshalls (E.A.) Ltd Ord	40	Total Kenya Ltd Ord
11	Sameer Africa Ltd Ord	41	Umeme Ltd Ord
			British-American Investments
12	Barclays Bank Ltd Ord	42	Company
13	CFC Stanbic Holdings Ltd ord	43	Liberty Kenya Holdings Ltd
14	Diamond Trust Bank Kenya Ltd	44	CIC Insurance Group Ltd Ord
15	Equity Bank Ltd Ord	45	Jubilee Holdings Ltd Ord
			Kenya Re-Insurance Corporation
16	Housing Finance Co Ltd Ord	46	Ltd Ord
			Pan Africa Insurance Holdings Ltd
17	IandM Holdings Ltd Ord	47	Ord
18	Kenya Commercial Bank Ltd Ord	48	Centum Investment Co Ltd Ord
19	National Bank of Kenya Ltd Ord	49	Olympia Capital Holdings ltd Ord
20	NIC Bank Ltd Ord	50	Trans-Century Ltd
21	Standard Chartered Bank Ltd Ord	51	A.Baumann CO Ltd Ord
	The Co-operative Bank of Kenya Ltd		
22	Ord	52	B.O.C Kenya Ltd Ord
			British American Tobacco Kenya
23	Express Ltd Ord	53	Ltd Ord
24	Hutchings Biemer Ltd Ord	54	Carbacid Investments Ltd Ord
25	Kenya Airways Ltd Ord	55	East African Breweries Ltd Ord
26	Longhorn Kenya Ltd	56	Eveready East Africa Ltd Ord
27	Nation Media Group Ord	57	Kenya Orchards Ltd Ord
28	Scangroup Ltd Ord	58	Mumias Sugar Co. Ltd Ord
29	Standard Group Ltd Ord	59	Unga Group Ltd Ord
30	TPS Eastern Africa (Serena) Ltd Ord	60	Safaricom Ltd Ord
		61	Home Afrika Ltd Ord

Source: Nairobi Securities Exchange

**Appendix II: Data for the Study**

<b>Year</b>	<b>NSE 20 Share Index</b>	<b>Consumer Price Index</b>	<b>Money Supply (M3) "USD"</b>	<b>Real GDP Per Capita</b>
2000	1,913.35	38.10	4,608.72	33,280.00
2001	1,355.05	40.30	4,683.65	33,743.00
2002	1,362.85	41.10	5,252.29	31,828.00
2003	2,737.59	45.10	5,925.64	31,825.00
2004	2,945.58	50.30	6,612.31	32,457.00
2005	3,973.04	55.50	7,712.99	33,376.00
2006	5,645.65	63.60	9,410.19	34,435.00
2007	5,444.83	69.80	12,406.79	36,000.00
2008	3,521.18	88.10	11,594.93	35,611.00
2009	3,247.44	96.20	13,795.00	35,461.00
2010	4,432.60	100.00	15,747.46	38,305.50
2011	3,205.00	114.00	17,799.29	38,969.80
2012	4,133.00	124.70	15,242.10	39,124.20
2013	4,926.97	131.80	15,534.00	39,426.40