RELATIONSHIP BETWEEN EXCHANGE RATE VOLATILY AND STOCK MARKET PERFORMANCE

By

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DECLARATION

I declare that this is my original work and has not been presented in any other University

or College for Examination or Academic purposes.

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

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DEDICATION

This research is dedicated to my loving family, for the support, encouragement and prayers during the entire period of my study.

God bless you

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ABBREVIATIONS

CFO	Chief Finance Officer
NSE	Nairobi Securities Exchange
MFI	Micro Finance Institutions
ROA	Return on Assets
IAPM	International Asset Pricing Model
OECD	Organization for Economic Cooperation and Development
PPP	Purchasing Power Parity
GARCH	General Autoregressive Conditional Heteroskedasticity
CAPM	Capital Asset Pricing Model
APT	Arbitrage Pricing Theory

ABSTRACT

In the year 2015 on the first two quarters there has been a poor performance in the Kenyan stock market. Investors had shifted to their funds to the stock exchange in Nigeria. Various reasons have been given to this changes. Major ones being introduction of the capital gains tax and exchange rate fluctuation. The latter reason was mainly assumed due to a similar fluctuation of the Kenya shilling against the dollar. This study thereby confirms if this reason given by analysts is true and whether investors, borrowers, stock brokers and the regulatory authority can use this study to predict the stock market performance.

Stock market performance is key in determining if an investor's portfolio of stocks will bring adequate return. This is looked at both in the long run and short run. Factors that influence the performance of the stock market is therefore important to both the investor and issuer. This research sought to determine the relationship between exchange rate volatility and stock market performance in the Nairobi Securities Exchange. Three major theories relating to the two variables are introduced to explain the relationship. Results of different scholars who have conducted their studies in stock markets across the globe will be presented in this research and an explanation of how they drive at their conclusion.

Descriptive research design was adopted for this study in which secondary data from the Kenya National Bureau of Statistics and Key Leading Economic was gathered over the period 2011- April 2015. The collected data was analyzed by use of Microsoft excel 2013 and statistical package for social sciences (SPSS) version 17. Regression and correlation analysis were done to determine the effects of exchange rate volatility on the performance of the stock a market. Other macro-economic factors i.e. Inflation volatility, Money supply volatility and interest rate volatility were also included to determine the impact it had on the performance in the stock market It was established that exchange rate volatility is among the determinants of stock market performance though not very key

CHAPTER ONE

INTRODUCTION

1.1Background of the study

Stock market performance plays a very crucial role in assessing economic conditions of any country through improved stock returns usually signified by higher profit to firms. Benita (2004). The performance of the stock market can be explained by many factors including liquidity risk, information asymmetry, and number of informed agents, number of regulations and their imbedded costs and the impact the degree to which a stock can be foreign-owned on the stock return volatility Lesmond (2005). All these factors have different effects on the returns from a given stock. Some factors have a positive effect on the stock return volatility whereas others have a negative one. This large number of factors does not allow disentangling the effect of each shock on the volatility. Upheld that exchange rate volatility have real economic costs that affect price stability, firm profitability and the general economic stability.

Exchange rate volatility has implications for the financial system of a country especially the stock market. However a survey of the available literature revealed divergent views of researchers on the issue of whether foreign exchange rate variability influences stock market volatility or not Kanas (2000). However, empirical evidence on the influence of foreign exchange market volatility on stock market is largely inconsistent. Mishra (2004) Admitted that there is no theoretical consensus on the interaction between stock prices and exchange rate. For instance, Solnik (1987) is of the opinion that there is a negative correlation between stock market and local currency. In a recent study however, Alaganar and Bhar (2007) indicate that the first and second-order effects of exchange rate changes significantly affect diversified portfolios in the US share market.

1.1.1 Exchange rate volatility

Exchange rate volatility refers to the tendency for foreign currencies to appreciate or depreciate in value, thus affecting the profitability of foreign exchange trades. The volatility is the measurement of the amount that these rates change and the frequency of those changes. There are many circumstances when exchange rate volatility comes into play, including business dealings between parties in two different countries and international investments. Although this volatility is difficult to avoid in such circumstances, the use of futures to lock in exchange rates can mitigate the effects of price change. Volatility can occur in any security that rises or falls in value. The term is most often used in conjunction with the stock market, but foreign currencies can be volatile as well. When exchange rates are floating exchange rates, as opposed to fixed exchange rates, they are likely to go up and down in value depending upon the strength of the economies involved. As a result, volatility is something that affects any business undertaking involving two different countries.

A weakening currency in the context of this study means a situation where the value of a currency has been depreciating significantly over time against other currencies. The long-term outlook for a weak currency is that it will continue to lose value due to fundamental weaknesses in the nation that issues this currency.

A factor which affects the exchange rate of a country is the relative interest rates. Changes in relative interest rates affect investment in foreign securities, which influences the demand for and supply of currencies. If a country's interests rates increases in comparison to the others, then its securities become attractive both for the domestic and foreign investors. This leads to increased demand for the country's currency leading to appreciation of its value and vice versa.

A second factor affecting exchange rate is relative income levels. Because income can affect the amount of imports demanded, it can affect exchange rates. The third factor affecting exchange rate is government controls. The government of foreign countries can influence the equilibrium exchange rate in many ways, this include imposing foreign

exchange barriers, imposing foreign trade barriers and affecting macro variables such as inflation, interest rates and income levels.

The fourth factor affecting exchange rates is market expectations of future exchange rates. Like other financial markets, foreign exchange markets react to any news that may have a future effect. Investors may temporarily invest in a country if they expect its interest rates to increase. This leads to appreciation of the country's currency in the short run. Madura (2000).

Exchange rate volatility is affected by many factors. In this study we analyzed its effect on stock market performance. The rate used is the Kenyan currency against the U.S dollar. In this case the currency will be the independent variable

1.1.2 Stock market performance

Stock market performance is also considered to be the reflector of financial and economic conditions of a country. Stock market performance indicates the degree of stock market index variation which reflects the changes in the share prices of listed companies during a particular period Aggarwal (1981)). A certain degree of market volatility is unavoidable, even desirable, as the stock price fluctuation indicates changing values across economic activities and it facilitates better resource allocation. But frequent and wide stock market variations cause uncertainty about the value of an asset and affect the confidence of the investor Ma C.K. and Kao (1990). The risk averse and the risk neutral investors may withdraw from a market at sharp price movements. Extreme volatility disrupts the smooth functioning of the stock market.

Literature suggests that a wide range of factors may be relevant in explaining the stock market performance including: goods prices, money supply, real activity, exchange rates, political risks, oil prices, trade sector, and regional stock market indices Krainer (2002). However, in emerging markets not all factors are at play in explaining this but factors like levels of political risks, goods prices, money supply and exchange rates may be analyzed

to see the empirical links with the stock market performance to find the effects of these on Fijis stock volatility further research is required.

In Kenya the stock market where buying and selling of shares is the Nairobi securities exchange. Stock performance is mainly measured by a key market index known as the 20 share index. The NSE 20 Share Index is a price weight index calculated as a mean of the shares of 20 public, listed companies. They are selected based on a weighted market performance during the period under review based the four main criteria: Trading activity measures i.e. market capitalization, shares traded, deals/liquidity and turnover during the period under review are weighed in the ratio of 4:3:2:1 respectively; A company must have a free float of at least 20%; Must have a minimum market capitalization of Kshs. 20 million; A company should ideally be a blue chip with superior profitability and dividend record. An increase in the index indicated improved performance of the stock market.

NSE Press Release (2014) an alternative measure stock market performance is the all share index (NASA). Stock market performance will be measured using the NSE 20 share index. This was be the dependent variable since the analysis entailed its effect as result change in local currency.

1.1.3 Relationship between exchange rate volatility and stock market performance

In an international context where transactions involve different currencies, the variability of foreign exchange rates is a potentially interesting factor that drives the level of the volatility of stock market returns. With the liberalization and the reduction of barriers to international investment, foreign investors can benefit from diversifying their portfolios internationally.

Li, Sarkar, and Wang (2003). When volatility is interpreted as uncertainty, it becomes a key input to many investment decisions.

Exchange rates, like any other commodity, are based on supply and demand for particular forms of currency. Local currency supply changes as a result of a country's fiscal and

monetary policies. Demand for currency can be influenced by a large number of factors, including imports and exports, interest rates, inflation, and views on impending government regulation. There are number of macroeconomic and industry related factors that potentially can affect the stock returns of the companies. The continuing increases in the world trade and capital movements have made the exchange rates as one of the main determinants of business profitability and equity prices Kim (2003). Exchange rate changes directly influence the international competitiveness of firms, given their impact on input and output price Joseph (2002).

Basically, foreign exchange rate volatility can influence the value of the firm since the future cash flows of the firm change with the fluctuations in the foreign exchange rates. Exchange rate appreciates, since exporters will lose their competitiveness in international market, the sales and profits of exporters will shrink and the stock prices will decline. On the other hand, importers will increase their competitiveness in domestic markets Nieh (2006). Therefore, their profit and stock prices will increase.

The depreciation of exchange rate will make adverse effects on exporters and importers. Exporters will have advantage against other countries' exporters and increase their sales and their stock prices will be higher Yau and Nieh (2006). That is, currency appreciation has both a negative and a positive effect on the domestic stock market for an export-dominant and an import dominated country, respectively Ma and Kao (1990). Exchange rates can affect stock prices not only for multinational and export-oriented firms but also for domestic firms. For a multinational company, changes in exchange rates will result in an immediate change in value of its foreign operations as well as a continuing change in the profitability of its foreign operations reflected in successive income statements Phylaktis (2005). Therefore, the changes in economic value of firm's foreign operations may influence stock prices. Domestic firms can also be influenced by changes in exchange rates since they may import a part of their inputs and export their outputs. For example, a devaluation of its currency makes imported inputs more expensive and exported outputs cheaper for a firm.

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Thus, devaluation will make positive effect for export firms Aggarwal, (1981) and increase the income of these firms, consequently, boosting the average level of stock prices Wu (2000). Thus, understanding this relationship will help domestic as well as international investors for hedging and diversifying their portfolio. Also, fundamentalist investors have taken into account these relationships to predict the future trends for each other Stavárek (2005).

Monetary policy maneuvers have a limitation as a tool to control the exchange rate. There is a   fiscal policy side to it as well that might require us to reduce public spending, and maybe introduce taxation measures, however unpopular, to reduce the appetite for imported goods. Persistent turbulence in the forex market is seen to be a signal that the shilling's weakness cannot be tackled using monetary actions alone but needs to be backed by fiscal policy actions targeting the underlying causes of the shilling's depreciation. Kenya's current account deficit (import-export gap) has grown to nearly 10 per cent of GDP, and in nominal terms stood at Sh101.5 billion at the end of the first quarter of the year, increasing the shilling's exposure. The stock market also hasn't been impressive in the first half of 2015. The NSE 20 Share Index lost 4 per cent while the All-Share Index returned just a mere 70 basis points.

Already, the 7.7 per cent drop in the benchmark index this year has spooked many investors into a search for safety within the market. Sector performance can easily tell us where investors' safe havens are. Over the first half of the year, agricultural stocks have emerged as the biggest beneficiaries of this sector rotation, up some 46 per cent this year. Lending additional support to the rise in agricultural stocks is the depreciation of the shilling. As the local unit has taken a hit against the US dollar (lost nearly four per cent this year), tea and coffee exports have increasingly become cheaper.

Additionally, market capitalization, which represents the market value of all listed companies' outstanding shares, declined by 10 basis points. A key driver of this bear run was the outflow of foreign positions in the market. Foreign sales in the first six months of

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the year amounted to Sh64 billion, which was a 25 per cent year-on-year growth compared to a similar period of 2014. The shilling weakened to a new low on, with traders wary of central bank action to support the local currency, while stocks fell for a second straight day. Business Daily (2015)

1.1.4 Stock market performance and exchange rate volatility current trends in Kenya

Blue chip losses weighed down the Nairobi Securities Exchange's main NSE 20 Share Index as it dropped by 49 points to 4,354 as at end of July 2015 — its lowest level since the first week of January 2013.Of the top counter at the NSE that account 52.9% of the market capitalization only EABL has been recording a share price gain. The other 3 i.e. Safaricom, KCB and Equity dropped in value. During the same period the exchange rate of the shilling against the dollar has been depreciating closing at 101.80/90 as at end of June. The Central Bank has tightened the monetary policy by increasing the Bank rate and KBRR rate to 11.5% and 9.87% respectively leading to a slight appreciation and steady rate of the shilling settling at 101.10/20 against the dollar in the first two weeks of August. During this period Kenya's main share index rose for a third straight session to close 0.8 per cent higher, while the shilling held steady, helped by a liquidity crunch in the domestic money markets.

1.2 Research Problem

Depreciation of the local currency could lead to improved stock performance since this depreciation could lead to cheaper exports hence more demand of commodities leading to increased cash flows and profits due to increased sales hence share price. Depreciation could also lead to increased interest cost on loans hence a reduction in cash flows and as a result share price demand. An increase in the stock market index will attract foreign investors to diversify shares in that stock market leading to investors demanding that currency hence currency appreciation.

Demand of the goods and services offered in a country by both the local and foreigners is a promise indicator of future economic growth in that country .Demand in the products offered in the stock market will increase its performance and likewise demand in the local currency will lead to the currency appreciating. As a result demand of shares in the stock market by foreign investors should lead a demand of the local currency hence its appreciation

Studies conducted on the two variables have never reached to a similar conclusion. Pilinkus (2009) explained the relationship only exists in the short run where exchange rate and other macroeconomic variables affect the stock market. Morales who conducted a study in Europe and North America argued that no relationship occurred between the two variables neither in the short run or long run. A study by Liu (2013) in the Chinese market concluded an inverse relationship between depreciation and stock market performance. Brooks contradicted this statement by analyzing Australian firms as identified a positive exposure between exchange rate and stock market returns. Adjasi's study in West Africa concluded that in the long run, depreciation of the local currency leads to increases in the stock price while in the short run depreciation lead to lower stock returns Other studies in Africa examined the exchange rate exposure at firm level in West African countries. Their findings are that firms are exposed to exchange rate changes. However, they did not look at the mechanisms of exchange rate exposure. The concern to policy makers is whether the East African Stock markets are exposed to exchange rate fluctuations, the mechanisms of exchange rate exposure and measures that should be taken to hedge such exposures.

Exchange rate has proven to affect economic growth. Over the past year the Kenya shilling has been depreciating and at the same time the NSE 20 share index and all share index had also reduced. Different opinions have been given towards the fall in the indexes. The foreign direct investors were attracted to the Nigerian stock market making them leave Kenya. But what could be the reason? Some analysts argued that the reason the introduction of capital gains tax caused the shifting of the markets. However before this was introduced the stock market performance was being affected on a daily basis and currently with high

changes in the exchange rate volatility being high the NSE share index has also deteriorated rapidly. As one would conclude that there is a negative relationship between the two, previous out comes that as a result of the Kenya shilling weakening stock prices have increased in some sectors of the economy e.g. the agricultural sector, whose current stock prices has increased due to cheap exports. Another argument that could contradict this is that a weak currency increases the finance cost of the listed company leading to increased debt and relatively less profit. Athi River Mining, one of the listed companies has been experiencing this problem due to the amount it owes to a Lagos-based Africa Finance Corporation (AFC).This has led its reduction in profits and share price.

This study will establish if there is a linear relationship between the two variables and to what extent the two variables are related. Based on the Kenyan market study over the last two quarters, I expect the relationship to positive between strengthening of the shilling and Improved performance at the NSE. This study will therefore attempt to answer the question, what is the relationship between exchange rate volatility and stock market performance?

1.3 Objective of the study

The main objective of the study is to establish whether there is a relationship between exchange rate volatility and stock market performance.

1.4 Significance of the study

This study will assist investors in concluding if they can use the exchange rate parameter to have an objective opinion in knowing the countries stock market returns. Based on the performance of the performance of the currency, an investor can also decide whether it is safe to diversify share portfolio in an economy's stock market whose currency is either appreciating or depreciating. This study will also enable investors when to hedge the securities invested.

Investment bankers and stockbrokers will also manage to advise its clients and get the knowledge on whether the weakening currency will affect their decision on whether to buy or sell a share leading to an increase in their brokerage commissions. Since some of them are also investors in the same market they may benefit the same way as an ordinary investor.

This study will also help corporations, SMEs and government entities in deciding the right time to raise capital in the stock market at a cheaper cost. These borrowers will be able to know the time in which shares will be on demand.

The Capital market Authority will also decide on whether it is necessary to place regulations relating to exchange rate. These regulations will be mainly to protect the investors from information asymmetry that may arise in relation to exchange rate.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews the various theories in regards to exchange rate volatility, change in stock market indices and how it affects performance of the local currency and stock market. It also explores the empirical studies that have been carried out by various scholars and researchers that relate to this study. This chapter lays a framework on how these variables will be analyzed in the chapter.

2.2 Review of theories

2.2.1 Purchasing Power Parity Theory

According to purchasing power parity theory as put forward by Madura (2000), price rates vary among countries, causing international trade patterns and exchange rates to adjust accordingly. When a country's inflation rates rises the demand for its currency declines as its exports decline due to their high prices. In addition, consumers and firms in that country tend to increase their imports. Both these forces place down ward pressure on the high-inflation country's currency. The theory bases its predictions of exchange rate movement on changing patterns of trade due to different inflation rates between countries.

The absolute form of purchasing power parity is based on the notion that without international trade barriers and transport costs, consumers shift their demands to wherever prices are lower. It suggests that prices of the same basket of products in two different countries should be equal when measured in a common currency. If a discrepancy in prices as measured by a common currency exists, the demand should shift so that these prices converge.

The minimum preconditions for absolute PPP include: Same production technology for individuals, Neutral-risk preferences, perfectly competitive goods markets in two different economies, No trade barriers such as transport costs, tariffs and trade quotas, and so on. It

is established on the "law of one price." Realistically, the preconditions for absolute PPP do not hold since transport costs, tariffs, and technological and preferential differences exist at all times and places and as such absolute PPP is rejected by most empirical surveys.

The relative form of purchasing power parity accounts for the possibility of market imperfections of transportation costs, tariffs and quotas. This vision acknowledges that because of these market imperfections, prices of the same basket of products in different countries will not necessarily be the same when measured in a common currency. It does state, however, that the rate of change in prices of the baskets should be somewhat similar when measured in a common currency, as long as the transportation costs and trade barriers are unchanged.

2.2.2 The Keynesian Theory

The theory was developed by John Maynard Keynes who used the hypothetical newspaper beauty contest to explain the behavior of investors in the stock market. Oblienugh (2010) Keynes argued that much of the investments in the stock market are driven by expectations about what the other investors think, rather than rational expectation about the fundamental viability of a particular share investment. He explains that stock market volatility occur because investments are determined by the herd-like 'animal spirits' of the investors. Keynes illustrated this herd mentality of investor with the analogy of a beauty contest that featured in a newspaper picture of a number of young women. The contest will be won on popular vote and readers are expected to vote for their favorite contestants. Entrants are asked to choose a set of six faces from the photographs of women that are 'the most beautiful' and those who pick the most popular face are eligible to contest for the prize.

2.2.3 Portfolio balance theory

Another theoretical argument in the relationship between stock prices and exchange rates is the portfolio adjustment approach. According to this theory, portfolio adjustments [movements in the foreign capital- inflows and outflows of foreign capital] occur whenever there is a change in the stock prices. If stock prices are on the increase, they will attract

more foreign capital. However, a decline in the stock prices will result in diminished corporate wealth leading to the reduction in the country's wealth. This may lead to a fall in the demand for money and monetary authorities reduce the interest rates to alleviate this situation. When interest rates are lower (relatively speaking), capital may flow out of the country to take advantage of higher interest rates in other part of the world resulting in currency depreciation. Therefore, according to this theory, lower stock prices may lead to currency depreciation.

A basic assumption underlying the flexible price and sticky price monetary models of exchange rate determination is that domestic and foreign assets are perfect substitutes implying that the expected yields on domestic and foreign assets are equalized. We will now relax this assumption by assuming that international investors regard domestic and foreign assets as substitutes but not perfect substitutes. Even if domestic and foreign assets are very similar in most respects, there may be difference in risk caused by differences in liquidity (the ease of which an asset can be sold), tax treatment, default risk, political risk, inflation risk, exchange control risk and exchange rate risks. It may also be the case that business cycles are not perfectly synchronized such that the rate of return on domestic and foreign assets are not synchronized implying that investors can hedge against capital losses by diversifying their portfolios. In other words, we assume that the risk associated with holding domestic and foreign bonds diers. Remember that an investor requires a higher expected rate of return on bonds that are more risky to compensate for the additional risk.

2.3 Determinants of stock market performance

2.3.1 Economic growth

Investors care about GDP reports because they provide the most comprehensive scorecard about the overall health of the economy. Since healthy economic growth helps boost corporate profits, over the long run stock market performance tends to mirror economic performance. In the short term, as we have seen, markets can behave unpredictably even during periods of positive economic growth.

2.3.2 Inflation

High inflation can also impact corporate profits through higher input costs. This causes corporations to worry about the future and stop hiring, negatively impacting the standard of living of individuals, especially those on fixed incomes. Because there is no one good answer, individual investors must sift through the confusion to make wise decisions on how to invest in periods of inflation. Different groups of stocks seem to perform better during periods of high inflation.

2.3.3 Government regulations

Introducing Capital gain tax on the share prices will be less attractive to the investors. This will lead to them seeking alternative stock markets in other countries leading to a reduction in the demand for the shares listed hence poor performance in the stock market.

2.3.4 Interest rates

A rise in the interest rates has negative impact on the stock market performance. Banks increasing their rates will lead to an increase in the finance cost of the listed companies hence a reduction in profits. Investor's speculation on the reduction of profits will lead to less demand on the stocks hence its poor performance.

2.3.5 Money Supply

Money supply is one of the components of monetary policy that the Federal Reserve uses. Changes in money supply can be either anticipated or unanticipated by the people. It is believed that anticipated and unanticipated changes in the money supply affect the stock market differently.

2.4 Review of empirical studies

At stock market-level, Friberg (1999) examined exchange rate exposure of stock markets in eleven industrialized countries from 1973 to 1996 following Jorion P. (1991). They used monthly effective trade-weighted exchange rate and ordinary least squares. They found positive exposure for most countries but which was insignificant in some countries. Also

inclusion of world stock index increased the explanatory power of exchange rate exposure. Jumah (2001) Found exposure to US$ in Germany, Japan and UK markets using multivariate GARCH from November 1990 to May 2000.

Hondroyiannis(2001) Examined foreign exchange rate influences on the stock market for Greece. They concluded that stock prices did not lead changes in real economic activity but that the macroeconomic activity and foreign stock market changes only partially influenced the Greek stock price movement

O.et.al, Arratibel(2009) Discovered that lower exchange rate volatility is associated with higher growth, higher stocks of FDI, higher current account deficits and higher access to credit

.Further studies tried to investigate whether exposure varies over time by modifying the methodologies. This was done by using rolling windows, dummy variables, dividing the data into sub-periods and ARCH family of models. Doukas (2003) Used unconditional and conditional multifactor pricing model and found exposure but not to the lagged exchange rate changes, it was time varying and priced in Japanese stock markets. Tai (2010) using MGARCH found that in the unconditional model, exposure was only significant at 10% level, but with the conditional model they found 10 industries were exposed. They also found that exposure was time varying but not priced in Japanese stock market. Also Miao et al. (2013) using panel model with both fixed and random effects found significant exposure in seven of sixteen industries that was also evident in non-exporters. They also found size asymmetry and time-variation in exposure in the new exchange rate regime.

Pilinkus (2009) investigated the short-run relationship between stock market prices and macroeconomic variables in Lithuania. One of their macroeconomic variables was exchange rate. The Augmented Dickey Fuller test was employed to check the stationary of the selected time series since a spurious regression may occur if a time series is not stationary. The study used the Impulse response function to test the existence of the short-run relationship between stock market prices and macroeconomic variables. As the results

of the Impulse response function are reliable only with a stationary time series the data was turned into stationary after the second difference. The results of the study clearly indicated that macroeconomic variables are significant determinants for stock market prices in Lithuania. Their study concluded that unemployment rate, exchange rate, and short-term interest rates negatively influence stock market prices.

In terms of their causality analysis, Morales (2007) results showed a unidirectional causal relationship form the exchange rates to the stock prices in the case of Hungary, Poland and Czech Republic. There was also evidence of causality from the Hungarian exchange rate to the United Kingdom stock prices, from the Polish exchange rates to the United Kingdom stock prices, from the Czech Republic exchange rate to the United Kingdom stock prices and from the Slovakian exchange rates to the United Kingdom stock prices. Finally, the study also found evidence of causality from the stock prices to the stock prices in the case of Hungary to United Kingdom, United Kingdom to Poland, and the United States to Poland.

Morales (2007) Examined the dynamic relationship between exchange rates and stock prices in four Easter European markets, Czech Republic, Hungary, Poland and Slovakia, using stock price and exchange rate data from these countries, as well as stock prices from the United States, Germany and the United Kingdom. The data set consisted of daily data over a 7 year period from 1999 to 2006. Both the long-run and the short-run association between these variables were analyzed. The study employed the Johansen co integration technique, Vector Error Correction Modeling and the standard Granger causality test to analyze the relationship between these two financial variables. The findings of the study showed that there is no evidence of stock prices and exchange rates moving together either in the long-run or in the short-run, with the exception of Slovakia, where co integrating relationships were found.

Choi (2009) applied the EGARCH model to volatility spillovers to empirically test volatility spillovers between stock market returns and exchange rate changes in New

Zealand. Their sample period spans from January 1990 to December 2004. And resultantly there were 3,866 observations. They examined whether the effect of volatility spillover changes over time by performing the test in the sub-periods using the EGARCH model. The study found that there is significant volatility spillovers from exchanges rate changes to stock market returns; volatility spillovers from stock market returns to exchange rate changes is marginally significant and changes from negative before the 1987 stock crash to positive after the crash.

Rahman (2009) investigated the interactions between stock prices and exchange rates in three emerging countries of South Asia namely Bangladesh, India and Pakistan. Their study considered average monthly nominal exchange rates of US dollar in terms of Bangladeshi Taka, Indian Rupee and Pakistani Rupee and monthly values of Dhaka Stock Exchange General Index, Bombay Stock Exchange Index and Karachi Stock Exchange All Share Price Index for period of January 2003 to June 2008 to conduct the study. Empirical result showed that exchange rates and stock prices data series are non-stationary and integrated of order one. They also applied the Johansen procedure to test for the possibility of a co integrating relationship. Result showed that there was no co integrating relationship between stock prices and exchange rates. Finally they applied Granger causality test to find out any causal relationship between stock prices and exchange rates. Outcome showed there was no causal relationship between stock prices and exchange rates in the countries.

Study on G-7 countries, finally stating that the reason for the lack of 7 strong relationships between exchange rates and stock prices may be due to the exchange controls that were in effect in the 1980s. Similarly, Nieh and Lee in 2001 examined the relationship between stock prices and exchange rates for G-7 countries for the period from October 1, 1993 to February 15, 1999.They claimed no long-run equilibrium relationship for each G-7 countries. While one day's short-run significant relationship has been found in certain G-7 countries, there is no significant correlation in the United States. These results might be explained by each country's differences in economic stage, government policy, expectation pattern, etc. In 2003, Kim showed that S&P's common stock price is negatively related to the exchange rate. Contemporarily, Smyth and Nandha studied the relationship for

Pakistan, India, Bangladesh and Sri Lanka over the period 1995-2001 and proved no long run relationship between variables. Unidirectional causality was seen running from exchange rates to stock prices for only India and Sri Lanka. Also, Ibrahim and Aziz analyzed dynamic linkages between the variables for Malaysia, using monthly data over the period 1977-1998 and their results showed that exchange rate is negatively associated with the stock prices. Results that came from Gordon & Gupta in 2003 and Babu and Prabheesh in 2007 claimed bidirectional causality stating that foreign investors have the ability of playing like market makers given their volume of investments.

The time variation can also be affected by exchange rate volatility which is the second moment exposure. Ahmadi R. (2012) Investigated whether stock returns are affected by exchange rate volatility in different industries of Tehran stock exchange using GJR-GARCH (1, 1) model. They found a strong evidence of exposure both in first and second moment. Demirhan, (2013) Studied exposure of textile and leather firms in Istanbul stock exchange from 2005 to 2011 using Jorion (1990) and GARCH analysis. They found 40% of the firms were exposed to both US Dollar and Euro. They also found that Dollar exposure did not change even after the crisis but Euro exposure dropped.

To overcome the shortcomings of CAPM, the arbitrage pricing theory (APT) was developed by Ross (1976) and extended to international setting by Solnik B. (1983). APT specifies that expected returns and some market-wide or industry-wide factors have a linear relationship. (Jorion, The pricing of exchange rate risk in the stock market (1991) Applied APT to the study of exchange rate exposure where exchange rate changes were included as one of the factors. They found firms were exposed and exchange rate risk was priced in the stock market.

Liu (2008) Observed existence of a strong association among Chinese stock market and macro-economic variables. A negative and inverse relationship was observed between currency value and stock prices. Though stock market was observed risky in the short run, outcomes proved that economic basics prevail in the long run. Regardless of short term

unpredictability, as Chinese market has a negative association with USA and other developed markets, it can offer shareholders with variegation and superior long-term returns.

Again in 2004, Griffin stated foreign flows are significant predictor of returns in Thailand, India, Korea, and Taiwan and in 2005, Doong (2005). Showed that these financial variables are not co integrated. Bidirectional causality could be detected in Indonesia, Korea, Malaysia and Thailand and significantly negative relation between the stock returns and the contemporaneous change in the exchange rates for all countries except Thailand. Ozair (2006) And Vygodina (2006) worked with US data. While Ozair proved no causal linkage and no Co integration between these two financial variables, the latter claimed causality from large-cap stocks to exchange rates. (Kurihara, 2006) takes Japanese stock prices, U.S. stock prices, exchange rate, Japanese interest rate etc.(period March 2001-September 2005). The results showed that exchange rate and U.S. stock prices affected Japanese stock prices. Consequently, the quantitative easing policy implemented in 2001 has influenced Japanese stock prices.

Pan et al. (2007) employed data of seven East Asian countries over the period 1988 to 1998, proving bidirectional causal relation for Hong Kong before the 1997 Asian crises and unidirectional causal relation from exchange rates and stock prices for Japan, Malaysia, and Thailand and from stock prices to exchange rate for Korea and Singapore. During the Asian crises, only a causal relation from exchange rates to stock prices is seen for all countries except Malaysia. Contemporarily, Erbaykal (2007) studied 13 developing economies, using different time periods and indicated causality relations for eight economies-unidirectional from stock price to exchange rates in the five of them and bidirectional for the remaining three. No causality was detected in Turkey; the reason of difference may be the time period used. However, (Sevuktekin, 2007) found bidirectional causality between the two financial variables in Turkey, using monthly data from 1986 to 2006.Again, Takeshi(2008) showed unidirectional causality from stock returns to FII

flows, irrelevant of the sample period in India whereas the reverse causality works only post 2003.

Chang,Chia-Lin and Hsu,Hui-Kuang and MclAleer ,Michael (2013) examined the effects of volatility spillovers for firm performance and exchange rates with asymmetry in the Taiwan found a negative correlation between exchange rate returns and stock returns. Aroni (2011) Analyzed factors influencing stock prices for firms listed in NSE and the results showed that there is a negative correlation between foreign Exchange rate fluctuations and stock returns.

Brooks (2010) Undertook an analysis on foreign exchange rate exposure of Australian firms and found that a greater part of firms experienced positive foreign exchange rate exposure than negative one. The strongest degree of exposure was observed in the energy, materials and industrial sectors. Australian firms illustrated irregularity and time variation in exchange rate exposure with varying results in different sectors.

Rizwan (2007) further explained varying importance of domestic macroeconomic variables in explaining the relationship between stock returns and volatility in Karachi stock exchange. A decline in exchange rate uncertainty also enhances price transparency increasing the efficiency of price mechanisms at international level P., De Grauwe, (2005) Schnabl (2007). Lower transaction costs and greater prices transparency also affect growth performance by increasing capital markets efficiency in capital allocation and by lowering risk premium and real interest rates Dornbush, (2001). In addition, if there are credit constraints, or if investment is irreversible, lower aggregate nominal exchange rate volatility is likely to translate into higher growth.

It is also evident that the standard Granger causality method has been the most predominant model used in most studies as earlier discussed. Among the few studies on emerging markets are Mishra (2004), Chortareas (2000), Granger, (2000), and Apte, (2001). They all found a significant positive relationship between stock prices and exchange rates while

others, such as Solnik B. (1987) reported a significant negative relationship between the two variables. On the other hand, some studies, such as Choi D. (2008) showed the possibility of a very weak or no relationship between stock prices volatility and exchange rates movement. On the issue of causation, most of the studies had mixed results Ibrahim (2000).

A study by Coleman(2008) on the policy factors and exchange rate volatility in the department of foreign exchange activity, Bank of Israel, Jerusalem found that exchange rate volatility has real economic expenditure that influence the price stability of the firm and its profitability as well as country's economic stability as a whole.

In Africa, Asaolu (2011) and Salifu(2007) examined exchange rate exposure of listed firms in Nigeria and Ghana respectively. They both used (Jorion, The pricing of exchange rate risk in the stock market, 1991) model and ordinary least squares. (Asaolu, T. O (2011) Found most firms are exposed with 88% to US$, 75.2% to UK pounds and 53.8% to Euro. They found no difference in exposure depending on whether the firm was in financial or non-financial sector. Salifu et al. (2007) found 55%, 35%, 25% and 35% of the firms are exposed to US$, UK Pounds, Euro and Nominal effective exchange rate (NEER) respectively. On sector analysis they found manufacturing and retail had great exposure while financial sector was not exposed. In both cases, they found that firms were negatively exposed to US$ and positively to UK Pounds.

Coleman and Tettey (2008) examined the effect of macroeconomic pointers on stock market conduct of Ghana Stock Exchange (GSE). It was observed that exchange rate losses did not affect the equities on the market, rather the shareholders benefited from the market as the Cedi depreciated.

Adjasi C. Harvey S.K and Agyapong (2008) Carried a study in Ghana stock exchange on the effect of exchange rate and the results showed that exchange rate volatility and stock market returns had a negative relationship. To be specific a reduction in stock prices

reduces wealth of local investors and further reduces liquidity in the economy. The liquidity level fall in addition reduces interest rates which in turn stimulate capital outflows and as a result causes currency depreciation. This is consistent with Abugri, (2008) who carried out a study in four Latin American countries on the region.

Adjasi, C.K.D.and B.N Biekpe (2005) showed that in the long term exchange rate depreciation leads to increases in stock k market prices in some of the countries, and in the short run ,exchange rate depreciations reduce stock market returns In Mishra K.A (2004) it was identified that there is no Granger causality between the exchange rate and stock return .This study indicated that stock return, exchange rate, the demand for money and interest rate are related to each other though no consistent relationship exists between them. He illustrated that the forecast error variance decomposition evidenced that the exchange rate return affects the demand for money; interest rate causes exchange rate to change; exchange rate affects stock return; demand for money affects stock return; interest rate affect stock return and demand for money affects the interest rate. Even though Pan et al (2007) showed that there is no co-integration between the exchange rate and the Malaysian stock market in the long run, their pair wise causality analysis reveals that a unidirectional causality exists from the exchange rate to the stock market in the short run.

In a study carried out by Jefferis (2000) on the relationship between stock prices and selected economic variables for South Africa, Zimbabwe and Botswana, the results revealed that in South Africa, stock return volatility was positively affected by real exchange rate. A study carried by Bailey and Chung (1995) on exchange rate fluctuations, political risk, and stock returns at the Mexican stock market that established a positive relationship between exchange rate changes and stock market return volatility. Cheng, (2011) in their study covering electronic industries in Taiwan found that exchange rate was significant and had a positive effect on stock returns. Hsing   (2011) examined the effects of selected macroeconomic variables on the stock market index of Johannesburg Stock Exchange in South Africa. His study used EGARCH model and the estimates found a positive relationship between exchange rate and the stock market.

Otuori (2013) studied the determinant factors of exchange rates and their effects on the performance of multinational firms listed in the NSEs in Kenya. The study selected a sample of 27 multinational firms listed in the NSEs, primary data collected using questionnaires and multiple linear regression analysis used. The results showed that interest rate and external debt had positive and significant effects on performance while inflation rate and external debt had negative and significant effects on performance. The study concluded that higher levels of: interest rate lead to higher profitability; inflation rate result in lower profitability; external debt result in lower bank profitability; and exports and imports lead to higher profitability in multinational firms listed in the NSEs.

Litali (2013) undertook a similar research study to investigate the relationship between the foreign exchange rate and the performance of the stock market. The study analyzed the relationship between the exchange rate between Kenya Shilling and the Euro, dollar, Sterling pound and the NSE 20-share index monthly closing averages. The study used monthly time series data for a six year period between January 2006 and December 2012. Explanatory research survey was used to explore the relationship between the variables. Empirical analysis employed the Johansen Co-integration test to determine the long run relationship between the variables, Granger causality test to determine any causal relationship between the stock returns and forex rate and VAR model to determine the response of stock returns to a shock on the exchange rates. Empirical results show that there is no co-integrating relationship between the stock returns and the exchange rates, meaning that there is no long term co-movement between the two variables and none of the variable is predictable on the basis of past values of the other variable. Results of Granger causality test indicate that there is no two way causal linkage between the two variables. Lastly, results show a weak relationship between the stock market and the forex market as indicated by the VAR model. From the impulse response analysis, a change in the forex rate is neutralized after three months

Mwangi (2013) investigated the relationship between foreign exchange risk management and values of Microfinance Institutions (MFIs) in Kenya. The study was conducted on 9MFI's licensed by the Central Bank of Kenya (NSE) and multiple linear regression analysis used. The results revealed that Chief Finance Officers (CFOs) in MFIs define the foreign exchange management policies; are in charge of the implementation of the foreign exchange risk management policies; there is a relatively close frequency is observed in the suggesting the possibility of foreign exchange risks and the degree of alertness towards countering the risks among the institutions; all the hedging instruments are applied among the MFIs; only a few institutions hedge over 60% of their foreign exchange values. A strong positive relationship was established between ROA and forward contracts, and between ROA and options contracts.

Olweny (2011) studied the effects of macroeconomic factors on stock return volatility at the Nairobi Securities Exchange with foreign exchange rate being one of the explanatory factors. The results showed that foreign exchange rate affect stock return volatility negatively.

Foreign exchange rate is the rate for which one currency is exchanged for another. In Kenya, a study was done titled, "The impact of foreign exchange rates and foreign exchange rate reserves on the performance of the NSE share index." The aim of this study was to at examine the impact of foreign exchange rates and foreign exchange reserves on stock markets performance at NSE. Monthly time series for NSE share index, foreign exchange rates and reserves covering the period 2003-2010 were used Multiple regression analysis techniques were employed to ascertain long run relationships between the variables. The study was guided by several theories including market efficiency theory, classical monetary, portfolio theory and empirical studies from India, Ghana and Kenya. The study concludes that Foreign exchange rates and foreign exchange reserves had an impact on the stock performance at NSE. Foreign exchange rates had negative impact on stock performance which was more significant. Foreign exchange reserves had positive impact on stock performance which was significant. The study also revealed that no significant relationship between Foreign exchange rates and foreign exchange reserves.

At country level, Entorf (2011) using Zellner's SUR estimated the exchange rate exposure of 27 nations. They found countries are exposed with emerging countries having a higher risk exposure. Patro (2002) examined exposure of sixteen OECD countries using GARCH, two factors international asset pricing model (IAPM) and pooled panel regression. They found eight countries were exposed at 5% level and two countries at 10% level.

Other studies looked at exposure at firm level in both developed and developing countries. In developed countries, Parlapiano F. and Alexeev (2012), Bartram et al. (2010), Alssayah (2013) and Hansen (2010) followed P. Jorion (1990). They found firms were exposed to various exchange rate changes and exposure was either positive or negative depending on the currency. In most cases only few firms exhibited exposure. Bartram (2010) Argues this could be due to firms passing through part of currency changes to consumer and also utilizing both operational and financial hedges.

S.A Knedlik (2006) maintained that the increased volatility of exchange rates in emerging markets is also attributed to the smaller size of their economies and consequently the smaller size of the market for their currency. Higher exchange rate volatility in emerging market countries is therefore an understandable expectation and reflects fundamental differences in the structure of economies. Nonetheless, it is obvious that a major obstacle for efficient planning in the business sector, and the authorities would have preferred to have greater exchange rate stability. Yet, under the current circumstances, exchange rate fluctuations are probably unavoidable. Volatile financial flows sometimes caused by developments in other currencies make the achievement of exchange rate stability nearly impossible Van de Merwe and Mollentze (2009). Benita and Lauterbach (2004) showed that exchange rate volatility have real economic costs that affect price stability, firm profitability and a country's stability. Exchange rate volatility has implications for the financial system of a country especially the stock market. Exchange rate volatility generates air of uncertainty as the variance of expected profits rises and its net present value falls Ogunleye (2002).

2.5 Summary

Purchasing power parity establishes a positive relationship between the prices and exchange rate. Whereas the portfolio balance theory explains that lower stock prices will lead to currency depreciation. Keynes explains that the performance of the stock market is driven by investor's speculations without using fundamental principle. Some empirical studies explain depreciation of the currency leads to higher returns in terms of exports becoming cheaper, others conclude that there is no relationship, other scholars identify that depreciation leads to lower poor performance in the stock market defending it in terms of the rise in fixed costs support the theory whereas others give the relationship a time lag. This research is therefore crucial to determine which studies are accurate when relating to Kenya and similar developing countries

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter explained the various stages and processes that were followed in completing the rest of the study. It elaborated how research is going to be executed and how the research is to be completed. The following subsections were included; research design, target population, data collection, and data analysis.

3.2 Research Design

The study used a descriptive research study as it seek to identify the kind of relationship existing between the dependent and independent variables in selected market environment. The variables were quantitative in nature.

 A multiple regression approach determined if there is a linear relationship between exchange rate and stock market indexes. A correlational study aimed at checking the magnitude of the relationship by calculating its covariance and if the variables show a negative or a positive relationship given by the correlation efficient. The confidence method was also be measured. This design allowed the researcher to measure and analyze the data. The relationship between the variables was to be studied in detail so as to make an objective and conclusive findings of the research. A graphical presentation was presented showing a visual presentation on the two variables performance over the years. By getting the correlation coefficient, one could also test the hypothesis to find out if the relationship observed was statistically significant.

3.3 Target Population

The target population consisted of the weighted index showing stock performance of all the companies listed in the Nairobi Securities Exchange.

3.4 Sample

This consisted of active company stocks listed on the NSE that were selected in computing the NSE 20 share index as at June 2015.Monthly data will be obtained on its performance over the period 2011 to June 2045. The 20 share index has been proven to measure stock performance more efficiently than the all share index and that is why it was used to conduct the analysis.

3.5 Data collection

The data collected will be secondary data from The Kenya National Bureau of Statistics statistical abstract and key leading economic indicator booklet to obtain the NSE 20 share index. Data relating to the exchange rate volatility was obtained from the Central Bank of Kenya website and Statistical abstract.

3.6 Data analysis

The data collected was processed using tables. The tables were used to present the data. Computer spread sheets such as excel was used to edit the data for the purposes of accuracy, consistency and completeness as well as computation of the descriptive statistics measures in the final analysis.

The correlation matrix was used to check the negative or positive relation of independent variable with dependent variable. The significance of the relationship between the dependent and independent variable was determined from the regression analysis as the coefficient of determination of the two variables which is usually referred as R Square .The coefficient of determination R^2 is used in the context of statistical models and it gives the proportion of the variance (fluctuation) of one variable that is predictable from the other variable. The coefficient of determination is a measure of how certain one can make predictions using a model. It ranges from 0-1. The higher the $R^2,$ the more significant is the effect of one variable in determining the other and vice versa.

Lastly, a trend analysis on the two variables was graphically presented by use of a chart line. The graphical presentation provided a visual analysis on the relationship between the two variables. Trend flow also explained if there was a time lag in their relationship

The following analytical model was used for analysis:

$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + u$

Where:

Y = Stock market performance measured using the NSE 20 share index

X_1 = direct quote exchange rate volatility of Kenya shilling against the dollar

X_2 = inflation rates volatility measured by the consumer price index changes

X_3 = Money supply volatility

X_4 = 91 day Treasury bill interest rate volatility

a = Stock performance not influenced by macroeconomic factors

b_0 = coefficient of independent variable

u = the regression residual

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presented an analysis of secondary data collected from Kenya National Bureau of Statistics Statistical abstract and its Key leading Economic indicator illustrating the macroeconomic variables that affect stock market performance between January 2011 and April 2015.

4.2 Descriptive Statistics

Table 4.1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std.
NSE 20 Share Index	52	3155	5491	4391.519	685.5244
Exchange rate volatility	52	-10.08%	7.5%	0.3%	0.023702
Inflation Volatility	52	-22%	40%	1.8%	0.142037
Money supply volatility	52	-2.867%	4.7%	1.2%	0.12298
Interest rate volatility	52	-34.36%	69.43%	4.1%	0.197964

Source: KNBS 2015, 2014 & 2013

Descriptive statistics was done for the metrics measuring stock market performance and exchange rate volatility. The result showed that the average performance of the stock market is at 4391.5 with a standard deviation of 685.52. The average volatility of dollar to Kes exchange rate is 0.3% with a standard deviation of 0.023702 while average inflation volatility stood at 1.8% with a higher standard deviation of 0.142037. The average volatility for the economy's money supply under this study is 1.2% with a standard deviation of 0.12298 while that of the 91 treasury bill rate stood the highest at 4.1% with an a standard deviation of 0.197964.

4.3 Correlation Analysis

Table 4.2 Correlation Analysis

	Nse 20 share index	*Exchange rate volatility*	*Inflation volatility*	*Money supply volatility*	*91 t bill rate volatility*
Nse 20 share index	1				
Exhange rate volatility	0.117833	1			
Inflation volatility	0.089442	0.156499	1		
Money supply volatility	0.04885	0.356337	-0.02316	1	
91 t bill rate volatility	-0.13507	0.142553	0.146074	0.046374	1

Source: KNBS 2015, 2014 & 2013

The correlation analysis table above shows that generally there is a weak correlation between the metrics determining stock market performance. All the independent variables show a weak positive correlation with an exception of the 91 Treasury bill rate which reflects a weak negative correlation.

4.4 Regression Analysis

Table 4.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	0.214738	0.046113	-0.03507	697.4413

Source: KNBS 2015, 2014 & 2013

Further, the variables produced statistically insignificant values for the study at 95% confidence level ($p>0.05$) hence not very reliable for explaining the relationship between exchange rate volatility and stock market performance. The results are as shown in table 4.4 below.

Table 4.4 ANOVA

Model	Df	Mean Square	F	Sig.
Regression	4	276296.3	0.568015	0.687079
Residue	47	486424.3		
Total	51			

Source: KNBS 2015, 2014 & 2013

Table 4.5 Regression Coefficients

Model		Unstandardized coefficients		t	sig
	Constant	4388.339	144.6457	30.33854	1.6E-32
	Exchange rate volatility	3504.417	4508.439	0.777302	0.440876
	Inflation volatility	459.6331	704.3895	0.652527	0.51724
	Money supply volatility	870.8617	8530.512	0.102088	0.919121
	91 t bill rate volatility	-578.2128	502.4705	-15077	0.255648

Source: KNBS 2015, 2014 & 2013

The established regression equation was;

$Y_i = 4388.339 + 3504.417X1 + 459.6331X2 + 870.8617X3 - 578.228X4 + u$

The study found that holding all the independent variables constant, the stock market performance would be 4388.339. A unit increase in exchange rate volatility, average Inflation volatility and money supply volatility leads to an increase in stock market performance by 3504.417, 459.6331 and 870.8617 respectively. A unit increase 91 Treasury bill rate volatility leads to a decrease in stock market performance by 578.228

4.5 Graphical Trend analysis
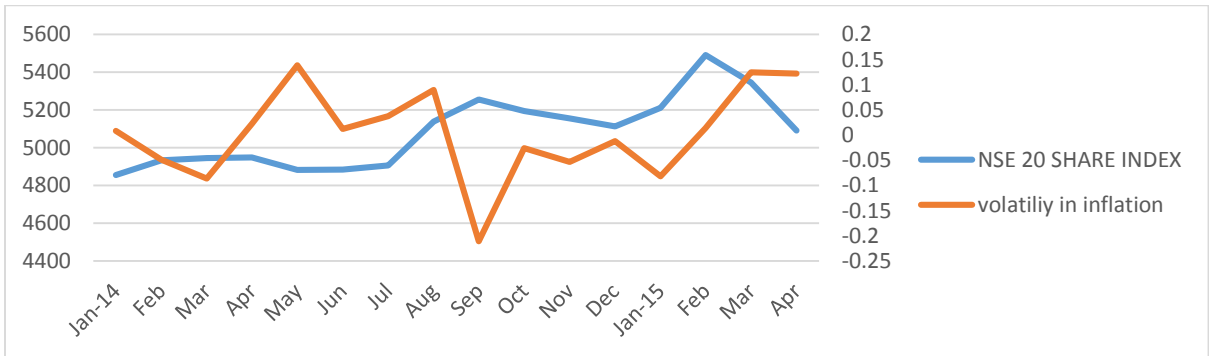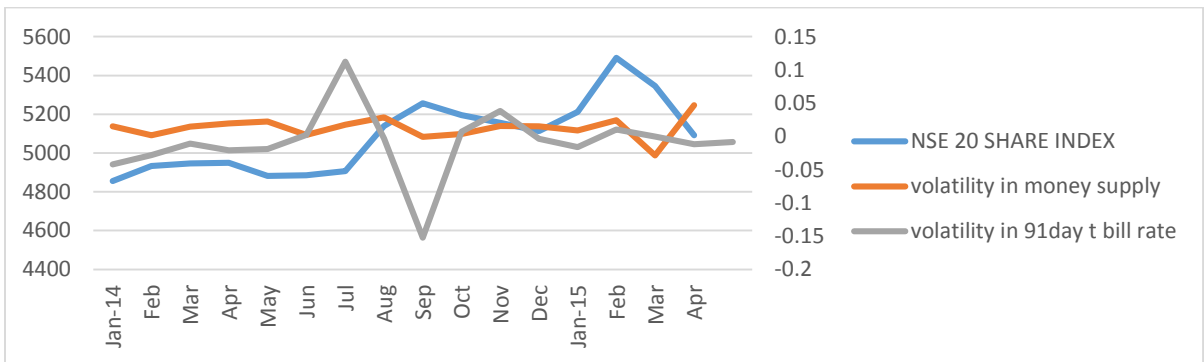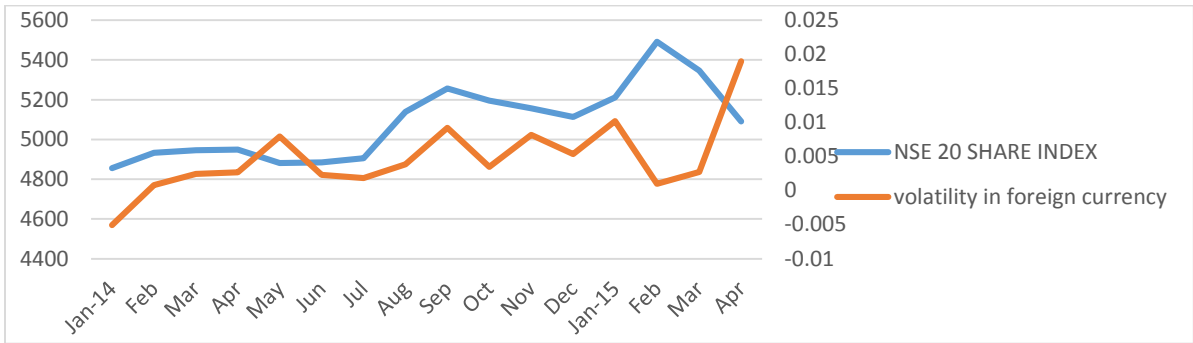
The movement of the variables are inconsistent with an exception of Inflation and 91 day t bill rate which seem to be moving in a similar direction. The exchange rate volatility has been increasing gradually with a few fluctuations while the stock market performance has also been increasing gradually with also a few fluctuations. In 2015 however the two variables moved in opposite direction. In January the exchange rate volatility decreased while the NSE 20 share index increased. From February the volatility of the dollar against the Kes increased while the stock market performance reduced.

4.6 Summary and Interpretation of findings

This study concludes that there is an insignificant positive relationship between exchange rate volatility and stock market performance (R=0.336213). Volatility of the other macro-economic variables i.e. Money supply volatility, inflation rate volatility, and interest rate volatility also poses an insignificant relationship with the performance of the stock a market.

$Y_i = 4388.339 + 3504.417X1 + 459.6331X2 + 870.8617X3 - 578.228X4 + u$

From the above equation and analysis, it was established that there was an insignificant positive relationship between exchange rate volatility and stock market performance. There was also no co-movement between the two variables hence they have no significant effect on each other both in the short run and long run. This findings conclude its insignificance since the volatility of the macro-economic variables predict only 3.75% of the performance of the stock market

This study it is evidenced by the weak correlation of 0.117833 and a p value greater than 0.05 explaining that the relationship is not significant. Similar to the findings achieved by Nieh and Lee (2001) in their study conducted in the G7 countries, there is no significant relationship that exists between the exchange rate volatility and stock market performance. There is a weak interaction and no co-integrating relationship between stock market performance and volatility of exchange rate. Rahman (2009) findings agree to this in his study conducted in three emerging countries of South Asia.

The study also analyzed the trend between the variables to establish if a co – movement or time lag existing between the variables. This findings interpreted that no such movement exists. Only the 91 day t bill rate volatility seemed to have a co-movement with the volatility of inflation rate. Similar to what was established by Litali (2013) in his trend analysis between the two varialbles in Kenya shows that there is no co-movement between the variables. The graphical representation in the movement shows a similar finding.

Lastly a time lag was also established to identify if any relationship exists in the short run and long run. This study shows that no such relationship exists. Morales (2007) findings on this dynamic relationship also showed that there was no evidence of stock prices and exchange rates moving together either in the long run or in the short run. His study covered four Easter European markets.

Despite being insignificant, regression analysis establishes a positive relationship between exchange rate volatility and stock market performance such that an increase in the change of exchange rate will result to an increase in the performance of the stock market, a study that conforms to Bailey and Chung (1995) in his findings at the Mexican stock market. The research found a regression equation for period January 2011 to April 2015 to establish the relationship between exchange rate volatility and stock market performance to be positive.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This research intends to identify if a relationship exists between exchange rate volatility and stock market performance. It was intended to the inform the relevant parties interested i.e. Foreign direct investors, Companies who would want to raise capital in the stock market, Stock brokers and The Capital Markets Authority. An introduction of the two variables was done and based on the market trend that occurred in the Kenyan market on the first two quarters 2015 and the an research problem existed in establishing if there is a relationship between the variables. Three theories related to the exchange rate volatility and stock market performance have been illustrated. Scholars have contradicted each other based on their findings between the two variables.

The research utilized secondary data, data was sampled from KNBS statistical abstract and Key leading Economic indicator between 2011 and April 2015. The reason for restricting this research to this period is because this is the latest data available for analysis. The target sample was achieved. The research aimed to investigate the relationship between exchange rate volatility and stock market performance. The results of the study established that on average the stock market performance stood at 4391.519. A weak positive correlation of 0.117833 exists between the volatility of dollar against the Kenya shilling exchange rate and the stock market performance. Other independent variables that is inflation volatility, money supply volatility also showed a positive weak correlation while the 91 Treasury bill rate showed a negative weak correlation.

The regression analysis study established that stock market performance had a positive relationship with the exchange rate volatility (R=0.336213). The independent metrics of macro-economic variables volatility were found to predict 3.755 percent of the performance of the stock a market. The relationship was found to be statistically insignificant as the P>0.05 at 95% confidence levels. The graphical trend analysis explains

that there is no co-movement between exchange rate volatility and stock market performance both in the long run and short run.

5.2 Conclusion

The study established exchange rate volatility and volatility of other macro-economic variables have insignificant relationship with the performance of the stock market. Various inferential and descriptive statistics supported the above conclusion, however it was established that the study variables only explain 3.755% of the times. There was an insignificant negative relationship between 91 Treasury bill rate and stock market performance while the other independent variables reflected an insignificant positive relationship. This insignificance is both in the long run and short run. There is also no co-movement in exchange rate volatility and the performance in the stock market. In the Kenyan market the players in the stock market should not use exchange rate risk and other macro-economic variables included in the study as a measure in diversification of portfolio.

Based on the results of the previous studies it is therefore appropriate to conclude that this relationship varies depending with the country where the stock market is and the Number of the listed company's reliance foreign debt, exports and imports. If companies whose share prices are considered to form an index that measures the overall stock performance are heavily reliant on foreign debt then volatility of exchange rate will affect the stock market directly. On the other hand, countries whose companies majorly export their products to other countries will bring an indirect relationship between the performance in the stock market and volatility of exchange rate. This findings is therefore an accurate conclusion and more efficient to use in the Kenyan market.

5.3 Recommendations to policy and practice

The study recommends that the investors should not use macro-economic variables to establish the performance of the stock a market in Kenya. Exchange rate volatility will not affect an investor who has diversifies his portfolio in the Kenyan stock market. This may be due to a balance between companies that reduce earnings hence stock price through

foreign interest expense and companies whose earnings increase as a result on an increase in the demand for exports. Another reason maybe because some companies that incur fixed cost expense may hedge this funds to avoid paying more due to foreign exchange fluctuations.

The study also recommends companies issuing IPOs not to use the macroeconomic variables to determine when issue in the lowest cost and assists stock brokers not to evaluate the performance of NSE based on fluctuations in macroeconomic variables. The Capital Markets Authority of Kenya should inform the players that one doesn't need to hedge the funds invested in the Nairobi Securities Exchange with the primary reason being loss of value of portfolio because of exchange rate fluctuation.

5.4 Limitations of the Study

The major limitation of this study is the analysis on exchange rate volatility only captures the volatility of the Kenya shilling against the US dollar. Other currencies may depict a different result. The second limitation is that this study uses the Nse 20 share index to measure performance of the stock market. There are also other indexes used to measure the stock market performance example being the all share index and pine bridge 27 index which could depict a different result. Based on this index this case study of Nairobi Securities exchange may not be used to conclude similar performance in other stock markets across the globe.

Thirdly information has been analyzed on a monthly basis though the changes in these two variables occur every second in their respective markets between Monday and Friday. This analysis therefore provides a slightly less accurate result. Lastly this data fully relies on the accuracy of the information obtained by the researchers of Kenya National Bureau of Statistics documents. Any discrepancy in their reports affects the outcome of this study.

5.5 Suggestions for further research

This study explored the relationship between exchange rate volatility and stock and stock market performance at the Nairobi Securities Exchange. The research focused on analyzing the performance of the stock market by use of Nse 20 share index. Researchers interested

in this field should analyze using the NSE all-share index, and pine bridge 27 index to determine is a similar result would be obtained.

Other active currencies traded in Kenya i.e. GBP and Euro should also be incorporated in the study for more accurate results and findings. To this end, further research should be done to investigate the relationship between exchange rate volatility and stock market performance in the rest of the developing countries in Africa to see if the relations are consistent.

Finally, other variables should also be added in the study e.g. economic growth and Capital gains tax and establish their effect on the stock market. Each of this variables should also be related with the exchange rate volatility. This will establish if an indirect relationship does exist between exchange rate volatility and stock market performance.

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APPENDIX

		NSE 20 SHARE INDEX	KES/DOLLAR EXCHANGE RATE	INFLATION RATE	money supply	91 day treasury interest rate
2010	Dec	4433	80.752	4.51	1,271,638	2.28
2011	Jan	4465	81.272	5.42	1,285,452	2.44
	Feb	4240	82.364	6.53	1,306,395	2.59
	Mar	3887	83.551	9.19	1,324,685	2.77
	Apr	4029	83.419	12.05	1,334,898	3.26
	May	4078	85.704	12.95	1,357,592	5.35
	Jun	3968	89.864	14.49	1,380,732	8.95
	Jul	3738	91.1	15.53	1,412,702	8.99
	Aug	3464	92.849	16.65	1,436,877	9.23
	Sep	3284	99.832	17.32	1,484,198	11.93
	Oct	3507	99.778	18.91	1,513,656	14.8
	Nov	3155	89.7208	19.72	1,489,751	16.14
	Dec	3205	85.0681	18.93	1,514,412	17.898

2012	Jan	3224	84.5875	18.31	1,505,764	20.56
	Feb	3304	82.9708	16.69	1,504,776	19.7
	Mar	3267	83.0556	15.61	1,517,126	17.8
	Apr	3547	83.2164	13.06	1,536,287	16.02
	May	3651	86.825	12.22	1,561,573	11.18
	Jun	3704	84.2333	10.05	1,594,661	10.09
	Jul	3832	84.2125	7.74	1,612,640	11.95
	Aug	3866	84.3208	6.09	1,638,212	10.93
	Sep	3972	85.2833	5.32	1,670,865	7.77
	Oct	4147	85.1775	4.14	1,702,545	8.98
	Nov	4083	85.9347	3.25	1,740,178	9.8
	Dec	4133	86.0286	3.2	1,727,324	8.25
2013	Jan	4417	87.6111	3.67	1,729,897	8.1
	Feb	4519	86.24	4.45	1,747,890	8.38
	Mar	4861	85.6386	4.11	1,755,742	9.88

	Apr	4765	83.8208	4.14	1,802,280	10.38
	May	5006	84.1462	4.05	1,823,398	9.46
	Jun	4598	85.4885	4.91	1,820,879	6.21
	Jul	4788	86.8595	6.02	1,835,454	5.92
	Aug	4698	87.4929	6.67	1,849,974	10.03
	Sep	4793	87.4129	8.29	1,885,780	9.58
	Oct	4936	85.3104	7.76	1,900,194	9.77
	Nov	5101	86.103	7.36	1,953,621	9.95
	Dec	4927	86.6506	7.15	1,996,241	9.53
2014	Jan	4856	86.21	7.21	2,026,568	9.26
	Feb	4933	86.28	6.86	2,030,488	9.16
	Mar	4946	86.49	6.27	2,060,313	8.97
	Apr	4949	86.72	6.41	2,100,610	8.8
	May	4882	87.41	7.3	2,147,479	8.82
	Jun	4885	87.61	7.39	2,152,132	9.81

	Jul	4906	87.77	7.67	2,190,076	9.78
	Aug	5139	88.11	8.36	2,253,316	8.29
	Sep	5256	88.92	6.6	2,251,762	8.35
	Oct	5195	89.23	6.43	2,260,023	8.67
	Nov	5156	89.96	6.09	2,295,350	8.64
	Dec	5113	90.44	6.02	2,330,265	8.5
2015	Jan	5212	91.36	5.53	2,351,016	8.59
	Feb	5491	91.45	5.61	2,408,057	8.59
	Mar	5346	91.7	6.31	2,339,018	8.49
	Apr	5091	93.44	7.08	2,448,959	8.42