EFFECT OF FOREIGN EXCHANGE EXPOSURE ON STOCK RETURNS FOR NON-FINANCIAL INSTITUTIONS LISTED ON THE NAIROBI SECURITIES EXCHANGE

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DECLARATION

This research proposal is my original work and has not been presented for examination in any other University.

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DEDICATION

This project is dedicated to my family members for their love and sacrifice. Their encouragement made pushed me to this level.

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LIST OF ABBREVIATIONS

ARCH	Autoregressive Conditional Heteroscedasticity
CAPM	Capital Asset Pricing Model
CBK	Central Bank of Kenya
EGARCH	Exponential Generalized Autoregressive Conditional Heteroscedasticity
FOREX	Foreign Exchange
KES	Kenya shillings
NSE	Nairobi Securities Exchange
PPP	Purchasing Power Parity
TGARCH	Threshold Generalized Conditional Heteroscedasticity
USD	United states dollar

ABSTRACT

Domestic currency depreciation makes local firms more competitive, leading to an increase in their exports. This in turn raises their stock prices. Forex rate serves as the basic link between the local and the overseas market for various goods, services and financial assets. It provides a basis of matching prices of goods, services, and assets quoted in different currencies. Forex rate movements can affect actual inflation as well as expectations about future price movements. A country's external sector of foreign trade is overly affected by foreign exchange rate movements. The study took a correlational approach in seeking to find if indeed foreign exchange exposure is one of the factors that affect the stock market returns and hence the foreign exchange exposure. The population in this study consisted of all 43 non-financial institutions listed on NSE. The study regressed stock returns against exchange rate exposure. The correlation coefficient showed a positive relationship between the study variables. From the ANOVA statistics, the F calculated at 5% level of significance was 5.872 and since F calculated is greater than the F critical (Value = 2.262), this shows that both models were significant. This is a sign that, foreign exchange exposure affects stock returns.

CHAPTER ONE:

INTRODUCTION

1.1 Background of the Study

Kenya's foreign exchange policy has undergone a series of evolution over the past decades. In the 1960s and 1970s a fixed exchange rate was maintained. Thereafter exchange controls were maintained from the early 1970s. The basic motive behind the foreign exchange controls stemmed from the balance of payments crisis of 1971/72: but the government then chose control instead of liberalization to conserve foreign exchange and control balance of payment pressure which instead created major imbalance in the economy which clearly manifests the early 1980s.

The historical policy regime shifts of the exchange rate can be divided into two phases: the fixed exchange rate period before 1982 and the flexible exchange rate after 1982. The introduction of flexible exchange rate in 1993 led to an explosive inflation rate and a huge response on interest rates (Ndung'u, 1999).

Foreign exchange rate has been found to play an important role in the investment and the international trade systems as the appreciation of real exchange rate can lead to growth of foreign direct inflow, thereby affecting the overall economy, (Jamil and Ullah, 2013). As economies are getting more and more open with international trading and globalization, companies become more exposed to foreign exchange rate fluctuations.

Currency exposure may affect companies that operate only on domestic market. (Aggarrwal and Harper 2010) study shows that exchange rate effects on domestic companies are not significantly different from those with international operations.

Exchange rate precariousness affects a country's stock market and yield levels of firms. Price movements in the stock market also affect aggregate demand through wealth, liquidity effects and indirectly the exchange rate, (Subair and Salihu, 2004).

1.1.1 Foreign Exchange Exposure

The exchange rate is the price of a unit of foreign currency in terms of the domestic currency. Foreign exchange risk is defined as an exposure of an institution/ firm to the potential impact of movements in foreign exchange rates (Adler and Dumas 1984).

Forex rate serves as the basic link between the local and the overseas market for various goods, services and financial assets. It provides a basis of matching prices of goods, services, and assets quoted in different currencies. Forex rate movements can affect actual inflation as well as expectations about future price movements. A country's external sector of foreign trade is overly affected by foreign exchange rate movements.

The exchange rate affects the cost of servicing on the country's foreign debt "Kenya's public and publicly guaranteed external debt increased by Sh84.8 billion to Sh1.17 billion in December 2014, from Sh1.086 trillion in June 2014. The growth in external debt during this period was largely driven by exchange rate revaluations," said CBK in the recently released monthly economic review for December 2014 (BMI research economic outlook Q4 2014).

Under the system of freely floating exchange rates, the value of the foreign currency in terms of the local currency, like any commodity or service being sold in the market, is determined by the forces of supply and demand on the contrary, par value rate is set

between the local currency and the foreign currency by the central bank in a fixed exchange rate system.

Foreign-exchange exposure is therefore the risk that an asset or investment denominated in a foreign currency will lose value as a result of hostile exchange rate oscillations between the investment's foreign currency and the investment holder's domestic currency

In practice, almost all trading of currencies are quoted in terms of the U.S. dollar. This is to say that USD is used as the base currency. For example, both the Euro and the British pound will be traded with their price quoted in U.S. dollars. If the quoted price is the price in dollars of a unit of foreign exchange, the quotation is said to be in direct (or American) terms, (Ross, 2002). The change in exchange rate is given by difference between the current rates less the previous rate divided by the previous rate which can also be taken in logarithmic form.

1.1.2 Stock Returns

The stock market has been used as an indicator for the prediction of future economic growth. It is commonly believed that large decreases in stock prices are reflective of future recession, and increasing stock prices are leading indicators of future economic growth (Mun, Siong& Thing, 2008). The 2009 recession generated a large-scale drop in stock prices that was reflected in the Dow Jones and the S&P 500 (Fuentes, 2010).

Stock market is important for the growth and development of any economy. It provides companies with facility to raise capital for expansion and growth through the selling off

of shares to the public or offering additional shares to shareholders through cash call. It provides a cheaper and a competitive way of raising additional capital for firms.

The market act as a center resources mobilization i.e. savings and redirecting the same to productive activities in the economy thereby facilitating growth and development. It provides the government with an opportunity through which it can raise the much needed resources especially for the long term projects such as infrastructure development through the sale of bonds, and also act as an economic indicator in that by looking at the movement in share prices and the stock market index, the government can be able to gauge the performance of the economy at large and thereby initiate either monetary or fiscal measures that can assist in facilitating growth and development (Munga, 2004).

Stock return is the sum of the increase in price of the stock plus the dividend percentage. The growth of a stock market index understates the total return because it ignores the stock dividends unless specifically called total return (Adam & Tweneboah, 2008).

1.1.3 Foreign Exchange Exposure and Stock Return

Stock returns are said to be uncertain at all times and volatility determines the stock return fluctuation. This shows that stock are very sensitive to foreign exchange risk (Kolari, Moorman & Sorescu, 2008). The stock prices can adjust dramatically and stock market volatility is likely to increase (Bialkowski, Gottschalk & Wisniewski, 2008).

Stock market volatility therefore causes much hesitancy in the stock market and posting much risk as the market explosiveness is high. In theory, foreign exchange rate causes stock market return to fluctuate. Pan, Fok & Liu, (2007) inferred significant causal relation from exchange rates to stock prices from Malaysia, Hong Kong, Thailand, and Japan before the 1997 Asian financial crisis.

According to (Sohnke M. Bartram & Gordon M. Bodnar, 2012) the exposure on stock return by exchange rate is conditional and result as there is a significant return impact to a firm-level currency exposure when conditioning on the exchange rate changes

The impact of foreign exchange rate tends to change the stock market return as the exchange rate changes i.e. exchange rates and stock market returns are related (Georgios and Katechos, 2011). The foreign exchange risk is one of the factors that determine the share price for foreign investments today.

In the literatures, three types of exposure under floating exchange rate regimes are identified; economic, translation and transaction. Translation and transaction exposures are accounting based and defined in terms of the book values of assets and liabilities denominated in foreign currency. Economic exposure is the sensitivity of company value to exchange rate movements. At the corporate level, changes in exchange rates affect the firm value, because future cash flows of the firm will change with exchange.

1.1.4 Nairobi Securities Exchange

Stock market is an important institution in a country and is of great concern to investors, Stakeholders and the government. Stock market, especially in small economies, plays a vital role in mobilizing economic resources within and from outside the economy to achieve sustainable growth and development. It serves as an important channel through which funds flow from individuals and corporate bodies across the globe to investors residing in a particular economy. (Ogum, Beer and Nouyrigat, 2006). NSE was formed in 1954 as a voluntary organization of Stock brokers and later on registered under the companies act in 1991 phasing out the "call over " trading system in favour of the floor based open outcry system. NSE is a market place where shares and bonds are traded. It is now one of the most active capital markets and a model for the emerging markets in Africa in view of its high returns on investments and a well-developed market structure. (www.nse.co.ke).

There are 41 listed non-financial companies which fall under agricultural sector, automobile and accessories, commercial services, construction & allied, energy & petroleum, manufacturing & allied and telecommunication & technology. These represent 69.5% of companies listed on NSE.

The non-financial institutions also form 60% of Nairobi Securities Exchange Ltd 20 Share Index which is a price weight index. The index members are selected based on a weighted market performance for a 12 month period: Market Capitalization 40%, shares traded 30%, Number of deals 20%, and Turnover 10%. Index is updated end of day only. (Nairobi Securities Exchange website). Although the types of risks confronting managers vary across industries, firms dealing with imports and exports realize that the market

prices of the commodities they deal with in their businesses will fluctuate, (Forslof and Nilsson, 2007)

Under Vision 2030 non-financial sectors of the economy is being strengthened. Agriculture, for example, has been identified as one of the key drivers of the economy. In order to sustainably achieve average economic growth of 10 per cent, reduce poverty levels and boost food security future exchange commission's has to be established. In addition, recent discoveries of oil, gas and other mineral resources are likely to sustain the creation of new industries over the next few years.

Kenya's potential for clean energy use in geothermal, hydroelectric, wind and solar power also supports the creation of a large energy sector that can support the growth of the broader region. These sectors have a bullish outlook, the capital markets are strategically poised to offer spot markets and derivatives markets based on agriculture, energy and mineral/metal commodities. (Capital Markets master Plan 2014-2023).

1.2 Research Problem

The stock market activity is important because the market sets up prices that affect the cost of capital and also because excess market capriciousness may distort the economy's allocation of capital and lead to financial strains (distress) through liquidity crunches and macroeconomic instability. Economies characterized by stock return volatility usually attracts little or no funds because they are regarded as risky. Developing economies are perceived to have high level of risk that international investors shy away from especially

the potentially profitable emerging markets. This perception is more prone when we consider foreign exchange fluctuations, (Muriu 2003).

The exchange rate changes are volatile ever since, and foreign exchange rate exposures of firms and industries are assumed to be large since the introduction of foreign exchange rate. In theory, foreign exchange rate causes stock market return to fluctuate (Pan, Fok & Liu, 2007).

The need to expand the regional market share comes in hand with foreign exchange exposure challenge and a robust risk management framework is key in reducing the adverse Forex exposures. Nevertheless, exchange rate exposure is acknowledged by both media and firms who actively hedge it. Marshall (1999) states four main objectives of foreign exchange risk management: minimize foreign exchange losses, reduce the volatility of cash flows, and protect earnings fluctuations and hedge the risk of the views on foreign exchange risk.

The existing currency exposure literature centers on the impact of foreign exchange volatility on international trade, firm value and the use of derivative and operational hedging strategies for example: equity risk and returns factors (Malamba, 2002), volatility of stock returns (Muriu, 2003), the effect of macro-economic factors on stock return volatility (Olweny and Omondi, 2010) and the impact of inflation on stock market return and volatility (Murungi, 2012). For international financial services, the current literature is concentrated around banks (Choi, Elyasiani and Kopecky 1992), Choi and Elyasiani (1997), Chamberlain et al. (1997) and Martin and Mauer, 2003)) Akong'a and Cynthia (2014) and little focus has been devoted to non- financial institutions. This is

disquieting given that it is recognized there are potentially different impacts of currency exposure on stock returns between financial and non-financial firms (Allayannis and Weston 2001) and (Koutmos and Martin 2003).

This study aims at filling this gap by answering the question: Does foreign exchange exposure affect stock returns of non-financial institutions listed on NSE?

1.3 Research Objectives

To determine the effect of foreign exchange risk exposure on stock returns of non-financial institutions listed on NSE.

1.4 Value of the Study

This study will be beneficial to Non-financial institutions listed on NSE and even those not listed or considering listing in the bourse. Specifically it will be beneficial in appreciating how foreign exchange exposure will affect the stock prices at NSE.

It will assist investors in making prudent investment decision bearing in mind the role of risk in any investment choice.

Financial analysts may use the result of this study to construct portfolios for their clients if the portfolio constructed results to improve returns while the Capital Markets Authority as an institution may use the study results to develop guidelines and policies to hedge investors and investments. Finally, the information obtained from the study will be of

great premise to scholars and academic researchers in future studies as it seeks build the existing literature by filling in the existing gaps.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews both theoretical and empirical literature on the effects of foreign exchange exposure on stock returns. It provides an overview of the literature which forms the premise for the latter analytical framework.

2.2 Theoretical Literature

In this segment, a review of the theories relating to the exchange rate exposure and how it affects stock returns is presented. This underlies the specifications of the test and translations of the outcomes in the observational work.

As per Eiteman et al., (2002) there is no broad hypothesis about determination of exchange rate. Economic theories clarify the conduct of currencies under specific conditions yet they may not be an exact portrayal of reality.

2.2.1 The Capital Asset Pricing Model Theory

Capital Asset Pricing Model (CAPM) is a regularly utilized valuing model as a part of deciding the obliged return of a security given certain risk level. CAPM was produced by Jack Treynor (1962), William Sharpe (1964), John Lintner (1965) and Jan Mossin (1966) in the 60s. CAPM presents the asset valuing hypothesis of William Sharpe and John Lintner (Fama& French, 2004). It is an expansion of the prior present day portfolio

hypothesis proposed by Harry Markowitz. The model considers precise risk, expected return and expected risk free rate as stock return determinants.

Return on a stock depends on the firm specific risk and the extent to which it is correlated with the market (idiosyncratic risk = beta of stock). According to CAPM, firm specific risk can be diversified away, whereas market risk cannot, hence firm specific risk is not included when calculating for return on stock R_i. Exchange rate risk is considered to be firm specific and can thus theoretically be diversified away by the sole investor. With the assumption that market is perfect, this theory asserts that it should not be priced into the market.

Roll (1977), asserts that market portfolio in practical should take into account all asset classes held by any investor including real estate, foreign assets and human capital. In actual sense, market portfolio is hard to be accurately observed and the substitution of stock index as proxy for true market portfolio is not significant, thus usefulness of CAPM may be questioned due to false corollaries.

2.2.2 Interest Rate Parity

This hypothesis states that the extent of forward premium (or rebate) ought to be equivalent to the interest rate differential between two nations of concern. At the point when interest equality exists, secured interest arbitrage (a circumstance whereby foreign

exchange risk is secured) is not practical in light of the fact that any interest rate advantage in the remote nation is offset by markdown on the forward rate. Henceforth the act of secured premium rate arbitrage would create a return that is no higher than what might be created by a domestic venture.

It therefore implies that equal returns will be generated in two different countries when the expected change in exchange rate is taken into account. As long as the forward represents an expectation regarding the future spot rate, it does not matter where an investor invests; the return will be the same both domestically and in a foreign country.

Correspondingly, interest rate equality guarantees that the return on a hedge in (or secured) foreign venture will simply be equivalent to the local interest rate on speculation of indistinguishable risk thus wiping out the likelihood of having cash machine. Therefore, secured interest arbitrage has preference in that there is a motivating force to put resources into currency of higher interest rate to the point where rebate of that currency in the forward markets is not more than the interest differentials. In the event that the rebate on the forward market of the higher interest rate currency gets to be bigger than the interest rate differentials, than it pays to venture into the currency of lower interest and exploit the excessive of forward interests on this currency.

2.2.3 Purchasing Power Parity

The Purchasing Power Parity (PPP) was initially developed by the Swedish economist Gustav Cassel in 1920s to analyze the relationship between the exchange rates of diverse nations. When and if exchange rates change to counterbalance the expansion rate differentials between two nations then the PPP holds.

In addition, the Absolute form additionally alluded to as the "law of single price" proposes that "prices of comparable products of two distinct nations ought to be equivalent when valued in a typical currency" if an error in cost as measured by the typical currency exists, the demand ought to move so that convergence of these prices occurs. This absolute form is however excessively optimistic and does not calculate market flaws like tax charges and transportation costs.

An optional form of the absolute form comes in to record for these market defects and states that in light of the market flaws, costs of comparable products of diverse nations will not basically be the same when measured in a typical currency in other words, the rate of progress in prices of these items ought to be comparatively similar when measured in a typical currency so long as of the blemishes stay unaltered. The PPP hypothesis suggests that under a floating regime of exchange, a relative change in purchasing power parity for any pair of currency ascertained as a price ratio of exchanged products would have a tendency to be approximated by an adjustment in the harmony rate of exchange between these two monetary standards (Shapiro and Rutenberg, 1976).

2.3 Determinants of Stock Returns

2.3.1 Interest Rate

The rate of interest can be defined as the opportunity cost of money. Howells (2008) defines an interest rate as a payment from borrowers to lenders which compensates the lenders for parting with funds for a period of time and at some risk. Ngugi and Kabubo (1998) states that the primary role of interest rate is to help mobilize financial resources and ensure the efficient utilization of resources in the promotion of economic growth and development. Chen et al. (1986) indicated that interest rate had positive impact on stock return. Nguyen (2007) found interest rate spreads had a significant effect on the riskiness of capital-intensive industries

Adjasi and Biekpe (2006) examined the relationship between interest rates and stock market returns for seven African countries. Cointegration tests indicated a long-run relationship between interest rates and stock prices for Kenya and South Africa.

2.3.2 Market and Firm Specific Factors

Madura (2008) further debates that some firms are more exposed to their own industry conditions than the general economic environment that is, investors use announcements from such firms as signals of their future economic prospects. These signals may include dividend announcements and earnings surprises. An increase in dividends may signal that a firm can more easily pay dividends and therefore it has sufficient cash flow. Higher earnings announcements pushes the investors to increase their estimates of the firms future cash flow and as such augment the stock prices upward.

Market related factors comprise investor sentiment, which signifies the overall disposition of investors in the stock market. He explains that since stock valuations reflect expectations, in some periods the stock market performance is not highly correlated with economic conditions. For instance, even though the economy may be weak, stock prices may rise if most investors believe the economy will improve in the near future.

2.3.3 Risk Factors

Brooks (2008) defines sovereign credit ratings as an assessment of the riskiness of debt issued by government. These ratings personify an estimate of the likelihood that the borrower will default on an obligation. Gendreau and Heckman (2003) posit that sovereign spreads over the yield of similar US Treasuries are usually used by investors in developing markets as indicators of country-specific risk. Through testing hypothetical portfolios of emerging equities from 21 countries and found a relatively strong future returns in the sample countries and that narrower spreads indicated weak future returns. They argue that foreign spreads incorporate the risk of 20 external debt default and therefore consequences of such a default which may include a currency crisis, flight of capital and political upheaval.

Kaminsky and Schmukler (1992) observe that sovereign risk ratings have a direct impact on emerging financial markets, including equity prices and further reason that “stock markets can be adversely affected by the relegation of sovereign bonds because

governments may raise taxes on firms to offset the opposing budget effect of higher interest rates on government bonds triggered by the downgrade. These cross-asset effects can be large". Erb et al (1995) found that country ratings account for 30 percent of the cross-sectional variation in average equity returns when a six month lag was allowed for to take into account the full consequence of the rating on equity prices.

2.3.4 Money Supply

Money supply effects can either be positive or negative. Since the rate of inflation is positively related to the growth rate of money Fama (1981), a rise in money supply could lead to an increase in the discount rate and thus lower the stock prices. However, this negative effect may be countered by money growth, which would possibly increase cash flows and stock prices Mukherjee and Naka (1995).

2.4 Empirical Literature

2.4.1 International Studies

A study conveyed by Bailey and Chung, (1995) on vacillations of exchange rate, stock returns and political risk at the stock market of Mexico built up a positive relationship between return instability of stock market and volatility in exchange rate changes.

Jefferies and Okeahalam, (2000) focused on the relationship between variables of selected economy and stock prices for South Africa, Botswana and Zimbabwe, the outcomes uncovered that in South Africa, stock return unpredictability was emphatically influenced by genuine exchange rate.

Remarkable contribution in financial markets literature was made by Simpson and Evans (2003) who explored the relationships between Australian banking stock returns and major economic variables of monetary policy like exchange rate and short and long-term interest rates. They used the monthly data for the stock returns, exchange rates and interest rates for the period of January 1994 to February 2002. The study found no evidence that Australia's bank stock market returns form a co integrating relationship with short term and long-term interest rates and exchange rates over the period of study and therefore conclusions might not be drawn relating to long-term rational expectations in the Australian banking market.

Subair and Salihu, (2004) likewise conveyed a study on the conversion scale instability and the share trading system in Nigeria and found that the conversion scale unpredictability had a negative effect on the stock exchanges on the other hand Adjasi and Biekpe, (2005) demonstrated that over the long haul, deterioration of exchange rate prompts increment in prices of stock market in a portion of the nations and in the short-run devaluation of exchange rate diminishes returns of stock markets. The observational results demonstrate a negative connection between stock returns and exchange rate exposure.

Joseph and Vezos (2006) examined the effect of foreign exchange rates and interest rates changes on stock returns of US banks. The study utilized an EGARCH model to record

for the ARCH impacts in every day returns rather than standard OLS estimation strategies with the outcome that the vicinity of ARCH impacts would had influenced estimation productivity. The outcomes recommended that the market return represented a large portion of the fluctuation in stock returns at both the portfolio levels and individual bank; and the level of the affect-ability of the stock returns to exchange rate and interest rate changes was not exceptionally maintained regardless of the utilization of high recurrence information. The study added to existing information in the territory by demonstrating that ARCH impacts had an effect on measures of affectability.

ElMasry and Ungern-Sternberg (2006) broadened past examination on the exposure to foreign exchange rate nonfinancial firms of UK at the business level over the time from 1981 for twenty years. The study contrasted from past studies in a manner that it considered the effect of the progressions (genuine and unforeseen) on firms' or commercial enterprises' stock returns in exchange rates. The discoveries showed that a higher rate of UK commercial ventures were presented to contemporaneous changes of exchange rate than those listed in past studies. There was likewise a proof of huge slacked exposures on exchange rate

Impacts of instability overflows for firm execution and trade rates in the Taiwan with asymmetry study by Chang et al, (2013) also discovered a negative relationship between stock returns and returns of exchange rate.

2.4.2 Local Studies

Sifunjo (1999) in his investigation of the causal linkages between driving costs in the market of foreign exchange and the Nairobi Stock Exchange (NSE), concluded that developments in exchange rates apply noteworthy impact on determination of stock value in Kenya.

Omondi and Olweny, (2011) mulled over the impacts of macroeconomic components at Nairobi Securities Exchange on stock return unpredictability with foreign rate exchange being one of the informative elements. Using monthly time series data for a ten years period between January 2001 and December 2010 and employing was Exponential Generalized Autoregressive Conditional Heteroscedasticity (EGARCH) and Threshold Generalized Conditional Heteroscedasticity (TGARCH). The outcomes demonstrated that foreign exchange rate influence stock return unpredictability adversely.

Aroni,(2011) investigated variables impacting stock costs for firms recorded in NSE and the outcomes demonstrated that a negative connection between foreign exchange rate variances and stock returns occurred. Chirchir, (2011) examined the relationship between share prices and exchange rates in Kenya over the period November 1993- April 2011. The research used Toda and Yamamoto (1995) method to determine the relationship between stock prices and exchange rates. The results indicated that there is bi-directional

causal relationship between exchange rate and share price. As regards the sign of causality, negative causality exists in both directions.

Jumah, I. M. (2013) using monthly time series data covering the period 1996 to 2012 sought to examine the effect of foreign exchange rate fluctuations on the stock return volatility on the Nairobi Securities Exchange, Kenya. The study employed Exponential Generalized Autoregressive Conditional Heteroscedasticity (EGARCH) in the empirical analysis. Study findings reveal that foreign exchange rate affect stock return volatility.

2.5 Summary of Literature Review

The literature reviewed so far have made divergence conclusion, notably Jumah, I. M. (2013) and Sifunjo (1999) concluded a positive relationship of foreign exchange exposure on stock returns contrary to the findings of Simpson and Evans (2003), Chang et al, (2013) and Aroni,(2011) inferring negative relationship on the same. These discrepancy on the results therefore creates a gap hence the focus of this study.

CHAPTER THREE:

RESEARCH METHODOLOGY

3.1 Introduction

This section addresses the study design adopted, study population, sample selection, data source, research instruments used in the study, variable measurement , validity and reliability test, data processing, presentation and analysis and ethical consideration made during data collection.

3.2 Research Design

The study adopted a descriptive design using the correlational approach in seeking to find if indeed foreign exchange exposure is one of the factors that affect the stock market returns. A correlational study aims at examining the covariance between two or more variables. The reason for this choice was because of the ability of this approach to determine if variables show a negative or positive relationship and the magnitude of the relationship given by the correlation coefficient between the variables being studied. The correlation coefficient, can be used test the hypothesis to find out if the relationship has statistical significance.

3.3 Population

Mugenda and Mugenda (2003) refer to population as the ‘universe’. Borg and Gall (1999) define population as all the members of a real hypothetical set of people, event or object to which a research wishes to generalize the results of the study.

The population in this study consisted of all 43 non-financial institutions listed on NSE which form 65.15% of companies listed on NSE and 60% of Nairobi Securities Exchange Ltd 20 Share Index. Non-financial institutions are classified under agricultural sector, automobile and accessories, commercial services, construction & allied, energy & petroleum, manufacturing & allied and telecommunication & technology. The non-financial institutions also form 60% of Nairobi Securities Exchange Ltd 20 Share Index. This population is considered representative of the industry. Consequently, a census approach was adopted.

Historical data relating to the daily foreign exchange rate (USD) and monthly stock prices were considered for a period of five years (2010-2014). The five year period was considered is sufficient for analysis and is adequate to make conclusive observations

3.4 Data Collection

Data for the study was obtained from Nairobi Securities Exchange and Central Bank of Kenya (CBK). The study used monthly stock prices data for non- financial institutions and the foreign exchange rate (USD) that covered the period (2010 to 2014). The series values for each month was calculated by averaging the daily stock prices.

3.5 Data Analysis

Burns and Grove (2003) define data analysis as a mechanism for reducing and organizing data to produce findings that require interpretation by the researcher. Data was then analyzed using regression analysis and descriptive statistics. Regression analysis was used to demonstrate the effect of foreign exchange exposure and stock returns According to Mugenda and Mugenda (2003), the regression technique is used to analyze the degree

of relationship between two variables. The linear regression model adopted for the study is as follows:

$$R_{it} = \alpha + \beta iFXit + \varepsilon t \quad \ldots\ldots\ldots\ldots(1)$$

Where:

Ri,t = the return for stock i

α = the constant term

FXi,t = percentage change in exchange rate

βi = is the exposure of stock return.

εt = the error term.

The coefficient βi represents the sensitivity of a company i's stock returns to exchange rate movements. In the model, FX represents exchange rates movements. The study considered firms exposure to the movements in the Kenya shillings to the US dollar. Ri,t is the percentage change stock prices using opening and closing monthly stock prices .

The above model has limitations, in that it does not incorporate the macroeconomic factors. To control for these macroeconomic influences on realized returns,

Jorion (1991) introduced another macroeconomic variable market return to control for market movements. A return to a market portfolio can be included in the model (Bodnar, Wong 2003), thus:

$$R_{it} = \alpha + \beta_{1i}R_m + \beta_{2i}FXt + \varepsilon t \ldots\ldots\ldots..(2)$$

R_{it}, = the return for stock i

α is the constant term

R_m – market return (NSE 20 share index)

εt is the error term.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter discusses and presents the analysis results and their interpretations.

This chapter presents the research findings on the effect of foreign exchange exposure on stock returns of non-financial institutions. The study was conducted on 5 year period using secondary data for the period 2010 to 2014 was used in the analysis. Regression analysis was used in analysis of the data.

4.2 Data Presentation

The findings of the study are as follows:

4.2.1 Descriptive Analyses

Table 4.2.1.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
StockReturns	60	.21	2.04	1.1393	.51108
ForexRate	60	.03	1.85	.8593	.54303
Valid N (listwise)	60				

Source: Research Findings

The study revealed that the mean monthly stock returns of non-financial institutions for five years was 1.1393, the mean monthly change in exchange rate was found to be

0.8593. The minimum monthly stock returns and change in exchange rates were 0.21 and 0.03 respectively.

4.2.2 Correlation Analysis

Table 4.2.2.1: Correlations Coefficient

		StockReturns	ForexRate
StockReturns	Pearson Correlation	1	.813**
	Sig. (2-tailed)		.000
	N	60	60
ForexRate	Pearson Correlation	.813**	1
	Sig. (2-tailed)	.000	
	N	60	60

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

Source: Research Findings

The researcher conducted a Pearson Product Moment correlation. The findings on the correlation analysis between foreign exchange exposure and stock returns, found a strong positive correlation of 0.813.

This is an indication that there was positive relationship between stock returns and foreign exchange exposure of non-financial institutions.

4.3. Regression Analysis.

In this study, a regression analysis was conducted to test the influence among predictor variable. The research used statistical package for social sciences (SPSS V 20) to code, enter and compute the measurements of the regression.

Table 4.3.1: Regression Model Summary

Equation 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.303[a]	.092	.076	.78425

a. Predictors: (Constant), ForexRate

Source: Research Findings

Table 4.3.2: Regression Model Summary

Equation 2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.406[a]	.165	.151	.62907

a. Predictors: (Constant), ForexRate

Source: Research Findings.

The adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the above findings Equation 1 showing the relationship with non-financial institutions had R squared value of 0.076 a signal that there was a variation of 7.6% on stock returns for non-financial Institutions. On the other hand equation 2 generated .151 R squared value which

indicated a 15.1% variation in market return due to changes in exchange rates. R the correlation coefficient shown in the table above indicated that there was a positive relationship between the study variables in both equation.

Table 4.3.3: Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.612	1	3.612	5.872	.019[b]
	Residual	35.673	58	.615		
	Total	39.285	59			

a. Dependent Variable: StockReturns

b. Predictors: (Constant), ForexRate

Source: Research Findings

Table 4.3.4: Analysis of Variance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.537	1	4.537	11.466	.001[b]
	Residual	22.952	58	.396		
	Total	27.490	59			

a. Dependent Variable: MarketReturns

b. Predictors: (Constant), ForexRate

Source: Research Findings

From the ANOVA statistics in table 4.3.3& 4.3.4 above, the output data, which is the population parameters, had a significance level of 1.9% and 0.1% respectively which shows that the data is good for making a conclusion on the population's parameter as the

value of significance (p-value) is less than 5%. The F calculated at 5% level of significance was 5.872 and 11.466 respectively since F calculated is greater than the F critical (Value = 2.262), this shows that both models were significant. This is a sign that, foreign exchange exposure affect stock returns.

Table 4.3.5: Regression Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.012	.189		31.868	.000
	ForexRate	-.451	.186	-.303	-2.423	.019

a. Dependent Variable: StockReturns

Source: Research Findings

Table 4.3.6: Regression Model Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.758	.151		5.012	.000
	ForexRate	.506	.149	.406	3.386	.001

a. Dependent Variable: StockReturns(Overall)

Given the equation

$$R_{it} = \alpha + \beta iFXit + \varepsilon t \quad \ldots\ldots\ldots\ldots(1).$$

$$R_{it} = \alpha + \beta_{1i}R_m + \beta_{2i}FXt + \varepsilon t \ldots\ldots(2)$$

The established regression equation out of the findings

$$Y = 6.012 - 0.303X + 0.78425 \ldots\ldots\ldots (1)$$

$$Y = 0.758 + 0.406X + 0.62907 \ldots\ldots\ldots (2)$$

From the above regression equations it was revealed that holding foreign exchange exposure, the non-financial institutions stock returns would be 6.012% and the overall market stock returns would be 0.758% respectively.

4.5 Discussion of Findings

The study further revealed that there was a positive relationship between the study variables from the correlation coefficient of 0.813.

The adjusted R squared is coefficient of determination findings table Equation 1 showing the relationship with non-financial institutions had R squared value of 0.076 a signal that there was a variation of 7.6% on stock returns for non-financial Institutions. On the other hand equation 2 generated .151 R squared value which indicated a 15.1% disparity in market return due to changes in exchange rates.

R is the correlation coefficient which shows the relationship between the study variables. From the findings shown in the table above there was a positive relationship between the study variables in both equation, however the difference in results between the two equation can be explained by the fact that the 1st equation may not have incorporate the macro-economic variables; the basis of having the second equation that used NSE 20

share index as a proxy to market return. A return to a market portfolio can be included in the model (Bodnar, Wong 2003).

From the ANOVA statistics in table 4.4.1& 4.4.2 above, the output data, which is the population parameters, had a significance level of 1.9% and 0.1% respectively which shows that the data is good for making a conclusion on the population's parameter as the value of significance (p-value) is less than 5%. The F calculated at 5% level of significance was 5.872 and 11.466 respectively since F calculated is greater than the F critical (Value = 2.262), this shows that both models were significant. This is a sign that, foreign exchange exposure affect stock returns of non-financial institutions listed on NSE.

The results of this study agrees with Jumah, I. M. (2013) who examined the effect of foreign exchange rate fluctuations on the stock return volatility on the Nairobi Securities Exchange. Study findings reveal that foreign exchange rate affect stock return volatility. Foreign exchange exposure affect both non-financial institutions and financial institutions stock returns.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the results on the effects of foreign exchange exposure on the stock returns of non-financial institutions listed on the Nairobi Securities Exchange. Based on the findings in chapter four, the study gives recommendations after which it draws the policy recommendations. The recommendations are presented also based on the objective of the study after which recommendations for further studies are drawn.

5.2 Summary and Findings

This study sought to establish whether changes in foreign exchange rate had any effect on the stock returns for non-financial institutions listed on NSE. The analysis covered firms listed in the NSE, sampled monthly average returns based on the closing and opening stock prices, monthly NSE-20 Share index and monthly USD Exchange rate data for 60 months covering the period 2010-2014. The study used SPSS V20 statistical software to analyze the data.

From the ANOVA statistics, The F calculated at 5% level of significance was 5.872 , since F calculated is greater than the F critical (Value = 2.262), therefore foreign exchange exposure affect stock returns of non-financial institutions listed on NSE.

The study also did correlation analysis in order to establish the extent to which the two variables move together. The results reveal that the two are positively correlated and a strong correlation in this case is found. That is when foreign exchange rate increases by 1% stock returns increases by 81.3%.

5.3 Conclusions

From the findings of the study and the summary of the findings discussed above, this study concludes that foreign exchange exposure affect stock returns for non-financial institutions listed on NSE. Further, the study concludes that exchange exposure affects the stock market performance/returns.

The stock market acts as a center resources mobilization and redirecting the same to productive activities in the economy thereby facilitating growth and development. It provides the government with an opportunity through which it can raise the much needed resources especially for the long term projects such as infrastructure development. Understating the variables that impact on the stock market is key in designing policies to enhance development.

5.4 Recommendations

From the summary and conclusions above, this study recommends the following. First that the policy makers need to factor the effects of exchange rate movement on the performance of the stock exchange. This is because their policies may affect the

performance despite their good intention to correct the deteriorating situations in the economy.

The monetary committee department at the Central bank of Kenya needs to maintain a stable foreign currency exchange. The policy makers should try to focus on both macro and micro economic variables that affect the stock returns and overall the performance of the economy.

Firms should endeavor to manage their foreign exchange exposure through different financial derivatives and set up robust risk models as a premise of managing foreign exchange exposure. This would motivate foreign investors to invest more hence boost the vibrancy of the market.

5.5 Limitations of the Study

This study faced different challenges and limitations.

The study used the NSE- 20 share index which includes all listed companies in the NSE. The use of NSE- 20 share index makes the sample selection to be biased and so excludes those companies that have not been listed at NSE. It also limits itself to one currency (USD). Therefore the policy implications relate to only those firms that are listed at NSE where as there are many non-financial institutions that are not listed on the NSE.

5.6 Suggestions for Further Studies

This study concentrated on the effects of foreign exchange exposure on stock returns for non-financial institutions listed on the Nairobi Securities Exchange. This study therefore recommends that another study be carried out to determine the influence of macroeconomic variables on the performance of the NSE. This is due to the fact that many macroeconomic variable play into the performance of the stock returns. An isolated analysis of each variable may fall short in explaining the actual market position. Future studies should incorporate other currencies.

The study also recommends that another study should be carried on companies with domestic market operations only.

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APPENDICES

APPENDIX I: DOLLAR RATES 2010

Date	Currency	Buy	Sell	Mean
4/1/2010	US DOLLAR	80.6767	80.8272	80.7519
29-01-2010	US DOLLAR	80.3722	80.5528	80.4625
26-02-2010	US DOLLAR	80.0528	80.2183	80.1356
31-03-2010	US DOLLAR	80.75	80.9222	80.8361
30-04-2010	US DOLLAR	80.5778	80.7639	80.6708
31-05-2010	US DOLLAR	79.8111	79.9917	79.9014
30-06-2010	US DOLLAR	81.3978	81.5861	81.4919
30-07-2010	US DOLLAR	80.1311	80.3144	80.2228
31-08-2010	US DOLLAR	77.6556	77.85	77.7528
30-09-2010	US DOLLAR	77.1167	77.3	77.2083
29-10-2010	US DOLLAR	76.6544	76.835	76.7447
30-11-2010	US DOLLAR	76.0244	76.2217	76.1231
31-12-2010	US DOLLAR	75.7378	75.9433	75.8406

APPENDIX II: DOLLAR RATES 2011

Date	Currency	Buy	Sell	Mean
3/1/2011	US DOLLAR	84.9278	85.2083	85.0681
31-01-2011	US DOLLAR	89.5889	89.8528	89.7208
28-02-2011	US DOLLAR	96.2944	96.75	96.5222
31-03-2011	US DOLLAR	101.003	101.461	101.232
29-04-2011	US DOLLAR	94.0194	94.2	94.1097
31-05-2011	US DOLLAR	91.4861	91.6833	91.5847
30-06-2011	US DOLLAR	88.3444	88.5583	88.4514
29-07-2011	US DOLLAR	86.75	86.9083	86.8292
30-08-2011	US DOLLAR	83.4194	83.6361	83.5278
30-09-2011	US DOLLAR	83.465	83.6372	83.5511
31-10-2011	US DOLLAR	82.7156	82.8906	82.8031
30-11-2011	US DOLLAR	81.1806	81.3639	81.2722
30-12-2011	US DOLLAR	80.7239	80.8683	80.7961

APPENDIX III: DOLLAR RATES 2012

Date	Currency	Buy	Sell	Mean
3/1/2012	US DOLLAR	84.1472	84.3333	84.2403
31-01-2012	US DOLLAR	83.9594	84.1417	84.0506
29-02-2012	US DOLLAR	83.9324	84.1206	84.0265
30-03-2012	US DOLLAR	85.3444	85.5667	85.4556
30-04-2012	US DOLLAR	84.8561	85.0583	84.9572
31-05-2012	US DOLLAR	85.9717	86.1328	86.0522
29-06-2012	US DOLLAR	85.4367	85.62	85.5283
31-07-2012	US DOLLAR	85.0283	85.2394	85.1339
28-08-2012	US DOLLAR	84.0444	84.2389	84.1417
28-09-2012	US DOLLAR	82.9083	83.1472	83.0278
31-10-2012	US DOLLAR	82.6417	82.8611	82.7514
30-11-2012	US DOLLAR	84.9	85.1611	85.0306
24-12-2012	US DOLLAR	84.9639	85.2172	85.0906

APPENDIX IV: DOLLAR RATES 2013

Date	Currency	Buy	Sell	Mean
2/1/2013	US DOLLAR	86.2139	86.4056	86.3097
31-01-2013	US DOLLAR	86.5556	86.75	86.6528
28-02-2013	US DOLLAR	84.9944	85.1667	85.0806
28-03-2013	US DOLLAR	86.0506	86.245	86.1478
30-04-2013	US DOLLAR	87.4317	87.6039	87.5178
31-05-2013	US DOLLAR	87.3061	87.4894	87.3978
28-06-2013	US DOLLAR	86.1111	86.2889	86.2
31-07-2013	US DOLLAR	85.1333	85.3083	85.2208
30-08-2013	US DOLLAR	83.6628	83.8478	83.7553
30-09-2013	US DOLLAR	84.8028	85.1639	84.9833
31-10-2013	US DOLLAR	87.2194	87.4194	87.3194
29-11-2013	US DOLLAR	87.4856	87.68	87.5828
31-12-2013	US DOLLAR	85.9789	86.175	86.0769

APPENDIX V: DOLLAR RATES 2014

2/1/2014	US DOLLAR	90.5311	90.6644	90.5978
31-01-2014	US DOLLAR	90.0511	90.2178	90.1344
28-02-2014	US DOLLAR	89.2694	89.4417	89.3556
31-03-2014	US DOLLAR	89.2372	89.4178	89.3275
30-04-2014	US DOLLAR	88.5478	88.7061	88.6269
30-05-2014	US DOLLAR	87.725	87.8833	87.8042
30-06-2014	US DOLLAR	87.7944	87.9639	87.8792
31-07-2014	US DOLLAR	87.4194	87.5917	87.5056
29-08-2014	US DOLLAR	86.8389	87.0194	86.9292
30-09-2014	US DOLLAR	86.3111	86.4889	86.4
31-10-2014	US DOLLAR	86.3861	86.575	86.4806
28-11-2014	US DOLLAR	85.9917	86.175	86.0833
31-12-2014	US DOLLAR	86.3222	86.5111	86.4167

APPENDIX VI: NSE 20 SHARE INDEX

	2014	2013	2012	2011	2010
JANUARY	4371.05	4371.05	3224	4465	3565
FEBRUARY	4537.42	4537.42	3304	4240	3629
MARCH	4731.91	4731.91	3367	3887	4073
APRIL	4911.5	4911.5	3547	4029	4233
MAY	4925.89	4925.89	3651	4078	4242
JUNE	4797.72	4797.72	3704	3968	4339
JULY	4710.47	4710.47	3832	3738	4439
AUGUST	4797.15	4797.15	3866	3464	4455
SEPTEMBER	4724.38	4724.38	3972	3284	4630
OCTOBER	4918.47	4918.47	4147	3507	4660
NOVEMBER	5040.8	5040.8	4083	3155	4395
DECEMBER	4916.54	4916.54	4133	3205	4433

APPENDIX VII: COMPANIES LISTED IN NSE AS AT END OF 2014

Agricultural
1. Eaagads Ltd Ord 1.25 AIM
2. Kakuzi Ord.5.00
3. Kapchorua Tea Co. Ltd Ord 5.00 AIM
4. Limuru Tea Co. Ltd Ord 20.00 AIM
5. Rea Vipingo Plantations Ltd Ord 5.00
6. Sasini Ltd Ord 1.00
7. Williamson Tea K. Ltd Ord 5.00 AIM

Automobiles & Accessories
8. Car & General (K) Ltd Ord 5.00
9. CMC Holdings Ltd Ord 0.50
10. Marshalls (E.A.) Ltd Ord 5.00
11. Sameer Africa Ltd Ord 5.00

Commercial & Services
12. Express Ltd Ord 5.00 AIM
13. Hutchings Biemer Ltd Ord 5.00
15. Kenya Airways Ltd Ord 5.00
16. Longhorn Kenya Ltd Ord 1.00
17. Nation Media Group Ord. 2.50
18. Scan group Ltd Ord 1.00
19. Standard Group Ltd Ord 5.00
20. TPS Eastern Africa (Serena) Ltd Ord 1.00
21. Uchumi Supermarket Ltd Ord 5.00

Banking
22. Barclays Bank Ltd Ord 0.50
23. CFC Stanbic Holdings Ltd ord.5.00
24. I&M Holdings Ltd Ord 1.00
25. Diamond Trust Bank K. Ltd Ord 4.00
26. Equity Bank Ltd Ord 0.50
26. Housing Finance Co Ltd Ord 5.00
27. Kenya Commercial Bank Ltd Ord 1.00
28. National Bank of Kenya Ltd Ord 5.00
29. NIC Bank Ltd Ord 5.00
30. Standard Chartered Bank Ltd Ord 5.00
31. The Co-operative Bank of K. Ord 1.00

Construction & Allied
32. Athi River Mining Ord 5.00
33. Bamburi Cement Ltd Ord 5.00
34. Crown Berger Ltd Ord 5.00
35. E.A.Cables Ltd Ord 0.50
36. E.A.Portland Cement Ltd Ord 5.00

Insurance
37. British-American Investments Co (Kenya) Ltd Ord 0.10
38. CFC Insurance Holdings Ltd ord.1.00
39. Jubilee Holdings Ltd Ord 5.00
40. Kenya Re-Insurance Corp. Ord 2.50
41. Liberty Kenya Holdings Ltd
42. Pan Africa Insurance Holdings Ord 5.00

Energy & Petroleum
43. KenGen Ltd Ord. 2.50
44. KenolKobil Ltd Ord 0.05
45. Kenya Power Co Ltd Ord 2.50
46. Total Kenya Ltd Ord 5.00
47. Umeme Ltd Ord 0.50

Investment
48. Centum Investment Co Ltd Ord 0.50
49. Olympia Capital Holdings ltd Ord 5.00
50. Trans-Century Ltd Ord 0.50 AIM

Manufacturing & Allied
51. A.Baumann CO Ltd Ord 5.00
52.B.O.C Kenya Ltd Ord 5.00
53. British American Tobacco Ltd Ord 10.00
54. Carbacid Investments Ltd Ord 5.00
55. East African Breweries Ltd Ord 2.00
56. Eveready East Africa Ltd Ord.1.00
57. Flame tree Group holding ltd Ord .0.825.
58. Kenya Orchards Ltd Ord 5.00 AIM
59. Mumias Sugar Co. Ltd Ord 2.00
60. Unga Group Ltd Ord 5.00

Growth Enterprise Market Segment
61. Home Afrika Ltd Ord 1.00

Investment Services
62. Nairobi Securities Exchange Ltd Ord 4.00

Telecommunication & Technology
63. Safaricom Ltd Ord 0.05