EFFECT OF EXCHANGE RATE FLUCTUATIONS ON MARKET CAPITALIZATION AT THE NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

This Project is my original work and has not been presented for a Degree in any other University.

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DEDICATION

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ABSTRACT

Market capitalization is an important measure for investors in the determination of the returns on their investment. Day-to-day stock price fluctuations provide freely available information on the health of a publicly traded company. Exchange rate fluctuations affect operating cash flows and firm value through translation, transaction, and economic effects of exchange rate risk exposure. The Kenya shilling has registered mixed performances against the USD. These fluctuations tend to increase market capitalization risk. In the Monetary Policy for Fiscal year 2011/2012, CBK attributed the appreciation of the Kenya shilling to the tight monetary policy stance adopted by the Monetary Policy Committee. In addition, the disbursements from the IMF through the Enhanced Credit Facility programme towards the end of 2011 and the disbursement of USD 600 million-syndicated loan to the government provided a further cushion to the Kenya shilling. Exchange rate fluctuations affect policy makers as well as investors hence the need to study fluctuations, which can aid in financial decision-making. This study sought to examine the the effect of fluctuations in exchange rate on market capitalization at the Nairobi Securities Exchange. The study was a descriptive case study. The study used secondary data collected from the Nairobi Securities Exchange. The study used monthly average market capitalization for the period 2012 to 2014. The market capitalization was obtained by computing the monthly market value of outstanding shares for all the 61 firms, listed at the Nairobi Securities exchange, for the period 2012 to 2014. The study conducted a regression analysis to establish the extent of relationship between fluctuations in exchange rate and market capitalization. The study carried out a T-test at 95% confidence level to establish the significance of the independent variable in explaining the changes in the dependent variable. From the findings, it was clear that there was positive correlation between the variables total market capitalization and monthly exchange rate fluctuations (0.774). It was established that all the independent variables had a significant contribution to the variance of the dependent variable at a significance level of 0.05. The relative importance of each of the independent variables was however different. Taking all factors (monthly exchange rate fluctuations, monthly average rate of inflation, monthly average interest rate) constant at zero, market capitalization will be 2921.680. The data findings also showed that a unit increase in monthly exchange rate fluctuations would lead to an 18.359 increase in market capitalization; a unit increase in monthly average rate of inflation will lead to a 55.809 decrease in market capitalization while a unit increase in monthly average interest rates will lead to a 10.241 decrease in market capitalization. In this study, a conclusion was drawn that the fluctuations in the exchange rate is a major determinant of the market capitalization at the Nairobi Securities Exchange. The study therefore recommends that the management of the firms should implement policies on growth of the market value of the firm during the periods of high exchange rate to enjoy the benefits that come with such seasons.

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LIST OF ABBREVIATIONS

ARMA   Autoregressive Moving Average

APT   Arbitrage Pricing Theory

CDS   Central Depository System

CMA   Capital Market Authority

CAPM   Capital Asset Pricing Model

CBK   Central Bank of Kenya

XRATE   Exchange rate

GDP   Gross Domestic Product

IMF   International Monetary Fund

JSE   Johannesburg Stock Exchange

KNBS   Kenya National Bureau of Statistics

NSE   Nairobi Securities Exchange

MRT   Market stock price

UNCTAD   United Nations Conference on Trade and Development

USD   United States Dollar

VEC   Vector Error Correction

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Exchange rate shows a country's competitiveness in global markets. Exchange rate between two currencies specifies how much one currency is worth in terms of the other, that is, the value of a foreign nation's currency in terms of the home nation's currency. The exchange rate is determined by the interaction of supply and demand for foreign currency in the interbank market for foreign exchange. Like the stock exchange, money can be made or lost on the foreign exchange market by investors and speculators buying and selling at the right times (O'Sullivan & Sheffrin, 2003). Benita and Lauterbach (2004) upheld that exchange rate fluctuations have real economic costs that affect price stability, firm profitability and the general economic stability. The financial position of an economy that is mainly determined by the capital market is susceptible to its foreign exchange fluctuation. Hence, this makes foreign exchange market developments to have cost implications on market capitalization.

Foreign exchange market (forex, FX, or currency market) is a worldwide-decentralized over-the-counter financial market for the trading of currencies. The purpose of the foreign exchange market is to assist international trade and investment, hence, allows businesses to convert one currency to another.

The internationalization of capital markets has resulted in inflow of vast sums of funds between countries and in the cross listing of equities. This has therefore made investors and firms more interested in the fluctuation of exchange rate and its effects on stock

market. Floating exchange rate appreciation reduces the competitiveness of export markets; and has a negative effect on the domestic stock market (Yucel & Kurt, 2003). But, for import dependent economy like Kenya, it may have positive effects on the stock market by lowering input costs. Exchange rate in Kenya was liberalized in October 1993 and since then has largely been determined by demand and supplies for the Kenya shilling vis-à-vis other currencies.

Through monetary policy, the Central Bank of Kenya (CBK), guards against inflation and ensures stability of prices, interest rates and exchange rates. CBK intervenes in the interbank foreign exchange market largely to smooth out erratic exchange rate fluctuations, thus helping to maintain orderly market conditions crucial for the shilling exchange rate stability. This protects the purchasing power of the Kenya shilling and promotes savings, investment and economic growth (Ndung'u, 2000).

1.1.1 Exchange Rate Fluctuations

Exchange rate fluctuations are a result of the floating exchange rate system that has been adopted by economies. In Finance, the rate at which one currency will be exchanged for another is what is referred to as the exchange rate. This rate is influenced by several factors including inflation, supply and demand for the two currencies, political stability and economic performance, Interest rates, public debt, and so on (Mishra, 2004). These factors are generally in a state of change; therefore, currency values fluctuate from one moment to the next. Although in retrospect a currency's level is largely supposed to be

determined by the underlying economy, the reverse occurs as huge movements in a currency can dictate the economy's fortunes (Morley & Pentecost, 2010).

Foreign exchange fluctuations induce foreign investors to become more risk averse to the impact of the fluctuations. This is attributable to the declining value of their investments associated with foreign exchange fluctuations. This leads to portfolio diversification of investments to stave off the effects of dwindling returns on investments. Returns on investments do not only depend on domestic economic performance of the asset but also on currency fluctuations (Ambunya, 2012). Therefore, appreciation of local currency results in investment gains, where as a depreciation decreases the gains.

1.1.2 Market Capitalization

Market capitalization, or "market cap," refers to the total value of all of a company's shares of stock. It is calculated by multiplying the price of a stock by its total number of outstanding shares. Market cap measures not only what a company is worth on the open market, but also the market's perception of its future prospects because it reflects what investors are willing to pay for its stock. All companies are categorized according to their market capitalization as small cap, mid cap, or large cap. Investors need to consider these categories because companies with different market caps have distinct risk/return characteristics and tend to perform differently depending on market conditions. However, there are no strict rules defining these categories - and the ceilings for each has, historically, gone up (Capstaff, J., Klaebee, A., & Marshall, A. P. 2004).

Market capitalization is one of the most important characteristics that helps the investor determine the returns and the risk in the shares. It also helps the investors choose the stock that can meet their risk and diversification criterion. Stock market plays a very crucial role in assessing economic conditions of any country as improved stock returns usually signify higher profit to firms. This consequently engenders economic growth and vice versa. Stock exchange market serves as a channel through which surplus funds are moved from Lender-Savers to Borrower-Spenders who have shortages of funds (Mishkin, 2000). Based on this premise, volatility in stock prices can significantly affect the performance of the financial sector as well as the entire economy. The financial position of an economy that is mainly determined by the capital market is susceptible to its foreign exchange volatility. Hence, this makes foreign exchange market developments to have cost implications for all the economic agents.

Market capitalization is a measure of the value of companies and stock markets, which is an on-going market valuation of a public firm whose shares are publicly traded on a stock exchange computed by multiplying the number of outstanding shares held by the shareholders with the current per share market price at a given time (Gitman, 2004).

1.1.3 Exchange Rates and Market Capitalization

Current literature in financial economics offers differing opinions about the relationship between exchange rates and market capitalization. Economic theory suggests that there should be a causal relationship between market capitalization and exchange rates (Caporale, Pittis & Spagnolo, 2002). However, there is no consensus on the nature of this

relationship. The theoretical and empirical relationship between market capitalization and exchange rates has been debated for many years. Although scholars and practitioners have studied the subject extensively, the effects of monetary developments on stock markets are not completely understood. It has been argued that a change in capitalization could change exchange rates or a change in exchange rates could change capitalization. This argument is based on the notion that variations in exchange rates alter firm's profits (Hashemzadeh & Taylor, 1988).

In Kenya, foreign exchange market experimented with virtually all types of exchange rate regimes: from fixed to crawling peg to flexible or floating rate along the general macroeconomic policies adopted since independence. Kenya's economy in the 1960s and 1970s was predominantly characterized by controls in virtually all key sectors. There were controls on domestic prices, foreign exchange transactions, interest rates and import licensing, among others. This approach seems to have served the economy well as evidenced by the remarkable economic growth witnessed in the first decade after independence, with an average GDP growth rate of 6.6% during the period from 1964 to 1973.

1.1.4 Nairobi Securities Exchange

The Nairobi Securities Exchange was started in 1920s as an informal market for Europeans only. In 1954, the market was formalized through incorporation into a company. Because under the colonial regime Africans and Asians were restricted from trading, it was difficult to convince native Kenyans of the importance of the exchange

after independence. In 1963, Africans were allowed to join and trade in the market. For many years, the market operated through the telephone with a weekly meeting at the Stanley hotel. In 1991, this market moved to IPS building and was opened to the public. In 1994, the market moved to its current location on the first floor of the nation centre (KASNEB newsline, 2007).

The NSE 20-share index recorded sharp drop to 3531 points by end of December 2008 (KNBS, 2009). The NSE 20 Share Index fell by 7.8% to stand at 3,247 points in December 2009 compared to 3,531 points December 2008 (KNBS, 2010). The Nairobi Securities Exchange (NSE) 20 share index rose steadily over the first three quarters of 2010 to reach a peak of 4,630 points during the third quarter. The index edged downwards slightly in the fourth quarter but remained relatively high at 4,433 points at the end of December 2012 compared to 3,247 points in December 2009 (KNBS, 2013). Since February 2009 there has been an increase in net foreign equity inflow at the NSE with the highest figure of Kshs 1 billion recorded in September 2009. Total for the year 2009 to date is Kshs 4 billion showing increased confidence by foreign investors (CMA, 2009). Foreign investor participation at the NSE as measured by average turnover figures dropped by 9%, from an average of 52% in the first quarter, 2010 to an average of 43% in the second quarter, 2010. In the first quarter, 2010, the NSE realized a Kshs. 5 billion net foreign investor cash inflow. The second quarter, 2010, saw that foreign investor inflow contracted by Kshs. 3.6 billion to Kshs. 1.4 billion. However, in June 2010 the inflows picked up (CMA, 2010).

1.2 Research Problem

Market capitalization is an important measure for investors in the determination of the returns on their investment. Day-to-day stock price fluctuations provide freely available information on the health of a publicly traded company. Exchange rate fluctuations affect operating cash flows and firm value through translation, transaction, and economic effects of exchange rate risk exposure. Income based on fair values reflects income volatility more than historical cost-based income. It is also found that income is more volatile with the recognition of unrealized fair value gains/losses on financial instruments.

The stock exchange is an exceedingly fluid, dynamic and engaging entity. It facilitates thousands of transactions, which occur simultaneously from traders striving to outbid and outsell each other thereby bringing about fluctuations in the stock prices which in turn determine the market capitalization of companies (Ologunde, Elumilade & Saolu, 2006). The changes in stock prices reflect investor expectations of the future performance of a given stock. It is what informs the investors in the selection of the stocks to include in their portfolios.

The Kenya shilling has registered mixed performances against the USD. The fluctuations ranged between 35 in 1994 when the Kenya shilling was strongest and 105 in 2011 when it was at its weakest (CBK, 2011, 2012). Recently, the range stood at 108 in 2015 (CBK website). This shows how volatile the KES/USD exchange rate has been. These fluctuations tend to increase market capitalization risk. In the Monetary Policy for Fiscal year 2011/2012, CBK attributed the appreciation of the Kenya shilling to the tight

monetary policy stance adopted by the Monetary Policy Committee. In addition, the disbursements from the IMF through the Enhanced Credit Facility programme towards the end of 2011 and the disbursement of USD 600 million-syndicated loan to the government provided a further cushion to the Kenya shilling (CBK, 2013). Exchange rate fluctuations affect policy makers as well as investors hence the need to study fluctuations, which can aid in financial decision-making. These kinds of fluctuations present real dangers to market capitalization stability. A weak shilling makes Kenyan stocks cheaper in the international market and vice versa. Fluctuation thus brings about questioning of the stability of financial markets.

Previous studies on the relationship between exchange rate and market capitalization, have examined the relationship between stock and foreign exchange markets mainly for the developed economies with very little studies being done on the developing countries (Aggarwal 1981, Soenen & Hennigar 1988, Ma & Kao, 1990, Roll, 1992 and Chow, Lee & Solt, 1997). Besides taking the context of the developed world, these studies found different results concerning the links between the two variables. For example, Aggarwal (1981) found that revaluation of the US dollar is positively related to stock market returns. In contrast, when Soenen and Hennigar (1988) considered a different period, 1980-1986, they found a significantly negative relationship. Roll (1992), who used daily data over the period 1988-1991 also found a positive relationship between the two variables. On the other hand, Chow, Lee and Solt (1997) using monthly data for the period 1977-1989 found no relationship between monthly excess stock returns and real exchange rate fluctuations. When repeating the exercise, however, with longer than six

months horizons they found a positive relationship between a strong dollar and stock returns.

Locally, Cherop (2010) did a survey on exchange rate fluctuation on tea export earnings among smallholders' tea factories in Kenya where she established that the exchange rate fluctuations greatly affected the earnings of smallholders at tea factories. During the time of depreciating local currency, the export earnings were higher even with low export quantities while export earnings reduced when the currency was appreciating. Maina (2010) did a study on the impact of exchange rate variability on investment in the electric power sub-sector in Kenya. Maina's findings show that the investments were high in the power subsector when the exchange rates were stable as compared to times of high fluctuations. Ambunya (2012) investigated the relationship between exchange rate movements and stock market returns volatility at the Nairobi Securities Exchange. The study established that with high fluctuations in the exchange rates, the exchange rates movement became bigger accompanied by a huge stock market return volatility. Wamukhoma (2014) examined the effects of foreign exchange rate fluctuations on horticultural export earnings in Kenya. The study concluded that the exchange rate is associated with horticultural export earnings in Kenya (Pearson correlation was 0.689). From the above studies, few studies if any have been done on the effect of fluctuations in exchange rate on market capitalization at the Nairobi Securities exchange. This study is therefore aimed to fill this research gap by examining the effect of fluctuations in exchange rate on market capitalization. This study sought to answer one question: What

is the effect of fluctuations in exchange rate on market capitalization at the Nairobi Securities Exchange?

1.3 Objective of the Study

To determine the effect of fluctuations in exchange rate on market capitalization at the Nairobi Securities Exchange.

1.4 Value of the Study

The results from this study will be useful to existing and prospective stock investors at the NSE in understanding the effect of fluctuations in exchange rate on market capitalization.

This will also inform the government and related agencies especially in the securities exchange, in coming up with policies to boost market capitalization in Kenya. The information will guide these firms in planning and will inform their strategies when coming up with such policies.

Researchers and students will benefit from this study in that they will be in a position to get information that can help them while carrying out research work in related fields to advance their research papers and projects respectively. This research will also increase the knowledge base concerning the effect of fluctuations in exchange rate on market capitalization at the Nairobi Securities Exchange. Investors and monetary authorities are all concerned with the behaviour of the exchange rate, as it directly or indirectly affect them. The behaviour of the exchange rate is, therefore, a useful indicator of capital markets performance that needs to be understood.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents the theories and previous literature related to the relationships between fluctuations in exchange rate and market capitalization and empirical studies concerning the same.

2.2 Theoretical Framework

Various theorists such as; Dornsburch and Fischer (1980), Fama (1965), Ross (1976), Branson (1977) and many other theorists, have provided theories concerning exchange rate and market capitalization. There is no theoretical consensus either on the existence of relationship between exchange rate fluctuations and market capitalization or on the direction of the relationship. This theoretical section shall consider the flow-oriented model, stock oriented model and the arbitrage-pricing model.

2.2.1 Flow Oriented Model

The flow-oriented model is based on microeconomic foundations. The model maintains that a causal relationship runs from the exchange rate to market capitalization. In other words, exchange rate movements affect the market capitalization. Flow oriented model considers the capital flows to have an impact on international competitiveness of enterprises and profits of firms. The profits and international competitiveness of firms will have an influence to stock market. In other words, the model suggests that fluctuation of exchange rate influences the share value of domestic and multinational firms.

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Saleh (2009) argued that the flow-oriented model implies that currency movements affect international competitiveness and balance of trade positions and consequently the real output of the country, which in turn affects the current and future expected cash flow of firms and their stock prices. This is because many companies conduct their business on the international market and changes in the exchange rate will have either positive or negative effects on the business operations. Choi and Papaioannou (2009) held that an appreciation of local currency under a floating regime might lead to decrease in company's benefit and competitiveness of exporting products and thus its stock price.

Exchange rate changes affect the competitiveness of firms through their impact on input and output prices (Joseph, 2002). When the exchange rate appreciates, exporters will be negatively affected. An appreciation of the currency will cause their goods and services to be dearer on the international market. This will cause their exports to decline, as buyers on the international market will see them as expensive. This will result in them losing competitiveness internationally. Consequently, their profits will decline and if profits decrease, the firms will lose competitiveness on the domestic stock market. Their attractiveness on the domestic stock market will decrease and this will result in their stock prices decreasing in value. Resultantly, a negative relation between domestic currency and stock price can be confirmed.

However, for importing firms, the appreciation of exchange rate reduces input costs and this will be advantageous for importing firms. The reduction in costs will mean that there would be low prices for the final products and services. This will in turn increase their sales and profits will increase. When profits increase the firm will be attractive on the

domestic stock market. This will boost the average level of stock prices. Therefore, the direction of the impact depends on whether the firm is predominantly an exporting or importing industry (Saleh, 2009).

2.2.2 Stock Oriented Model

Pilbeam (1992) points out an obvious problem with the flow-oriented model as being that they have nothing to say about international capital movements, although it is known that international capital movements are very large and dominate the foreign currency market. This shortfall in flow models led to the development of fundamentalist models that stressed the role of the capital account of the balance of payments (often known as stock oriented models or asset models of exchange rate determination). Stock oriented models put much stress on the role of the financial (formerly capital) account in the exchange rates determination.

Adjasi and Biekpe (2007) held that in the stock oriented model, "the exchange rate equates demand and supply for assets (bonds and stocks). Therefore, expectations of relative currency movements have a significant impact on price movements of financially held assets. Thus market capitalization movements may influence or be influenced by exchange rate movements". These models can be divided into two: the monetary model and portfolio balance model. The monetary model considers the supply and demand for currencies to be determined by stock equilibrium in the money market. The model implies that since the exchange rate is the price of one money in terms of another, the relative supplies of, and demands for, the two monies must determine it (Moosa, 2000).

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According to monetary model, the exchange rate is seen as a relative asset price. The present value of an asset is thought to be largely influenced by its expected rate of return. The model suggests that the exchange rate is determined by three independent variables namely; relative money supply, relative interest rates and relative national output. The sticky price monetary price model assumes that price of goods are sticky in the short run, and purchasing power parity holds in the end. Therefore, a change in the nominal money supply causes a change in the real money supply, which in turn, results in interest rate changes and capital flows (Siddaiah, 2010). Changes in capital flows will then cause changes in the exchange rate.

The Portfolio balance models postulate a negative relationship between market capitalization and exchange rates and concluded that market capitalization has an impact on exchange rates. Stavárek (2004) held that this model presumes an internationally diversified portfolios and the role of exchange rates to balance the demand for and the supply of domestic as well as foreign assets. A rise in domestic stocks prices leads to the appreciation of domestic currency through direct and indirect channel. A rise in prices encourages investors to buy more domestic assets selling simultaneously foreign assets to obtain domestic currency indispensable for buying new domestic stocks.

According to the portfolio balance model, an increase in domestic assets prices results in growth of wealth, which leads investors to increase their demand for money, which in turn raises domestic interest rates (Stavárek, 2004). Higher interest rates attract foreign capital and initiate an increase in foreign demand for domestic currency and its subsequent appreciation. According to monetary approach, an exchange rate is the price

of an asset (one unit of foreign currency) and therefore the actual exchange rate has to be determined by expected future exchange rate similar to the prices of other assets. Portfolio balance model states that if prices of domestic stock rise, it will persuade investors to buy assets that are more domestic by selling foreign assets to obtain domestic currency. Increase in demand of domestic currency will lead to appreciation of domestic currency. On the other side, if the prices of domestic asset rise that will result in growth of wealth, which will also increase the demand for money by the investors that will give rise in domestic interest rates. More foreign capital will be attracted in this situation, which will increase the foreign demand for domestic currency, and ultimate result will be the appreciation of domestic currency (Saleh, 2009). Thus according to portfolio balance model there is an inverse relationship between market capitalization and exchange rates.

2.2.3 Arbitrage Pricing Theory

Ross (1977) as a theoretical alternative to the Capital Asset Pricing Model (CAPM) introduced APT. It helps to establish the price model for various shares of stock. Developed by economist Stephen Ross in 1977, the underlying principle of the pricing theory involves the recognition that the anticipated return on any asset may be charted as a linear calculation of relevant macro-economic factors in conjunction with market indices. It is expected that there will be some rate of change in most if not all of the relevant factors. Running scenarios using this model helps to arrive at a price that is equitable to the anticipated performance of the asset. The desired result is that the asset price will equal to the anticipated price for the end of the period cited, with the end price discounted at the rate implied by the Capital Asset Pricing Model. It is understood that if

the asset price gets off course, that arbitrage will help to bring the price back into reasonable perimeters.

In practical application, the utilization of the arbitrage pricing theory can work very well when it comes to increasing the long term value of a stock portfolio. For example, the use of APT when the current price is very low would result in a simple process that would yield a return while still keeping the portfolio secure. The first step would be to short sell the portfolio, then buy the low priced asset with the proceeds. At the end of the period, the low priced asset, which will have risen in value, would be sold and the proceeds used to buy back the portfolio that was recently sold. This strategy usually results in a modest amount of revenue for the investor. Arbitrage pricing theory does not rely on measuring the performance of the market. Instead, APT directly relates the price of the security to the fundamental factors driving it. The problem with this is that the theory in itself provides no indication of what these factors are, so they need to be empirically determined. Obvious factors include economic growth and interest rates. For companies in some sectors other factors are obviously relevant as well such as consumer spending for retailers.

Drake and Fabozzi (2009) argue that the APT model postulates that an asset's expected return is influenced by a variety of risk factors, as opposed to just market risk of the CAPM. That is, the APT model asserts that return on an asset is linearly related to many factors. The APT does not specify what these factors are, but it is assumed that the relationship between asset returns and factors is linear. The APT model asserts that investors want to be compensated for all the risk factors that systematically affect the

return of a security. The compensation is the sum of the product of each risk factor's systematic and the risk premium assigned to it by the capital market.

2.3 Determinants of Market Capitalization

Market capitalization refers to the sum derived from the current stock price per share multiplied by the total number of shares outstanding. As outstanding stock is bought and sold in public markets, capitalization could be used as a proxy for the public opinion of a company's net worth and is a determining factor in some forms of stock valuation. Preferred shares are included in the calculation (Woo, 1981). The total capitalization of stock market or economic regions maybe compared to other economic indicators. Although the market capitalization of a company is an indication of the value of the company, it is only a temporary metric based on the current stock market.

The true value of the company which is represented by its profits, product positioning, balance sheet, among other variables may not be reflected in the market capitalization at all times because of information asymmetry (O'Regan, 2002). Of course, the perfect example occurred during the dot-com explosion of the late 1990s, when the market caps of many companies that never made a dime in profit rose to astronomical heights. Conversely, a company can be doing well, but still have a low market capitalization if its products and reputation have not caught the fancy of the masses (Ologunde, Elumilade & Saolu, 2006). Determinants of market capitalization are classified into economic growth, financial intermediary development, macroeconomic stability and external factors.

2.3.1 Macroeconomic Stability

Macroeconomic stability is said to have an impact on market capitalization. One would generally expect that with instability, firms and investors would be discouraged from participating in the market. This situation is particularly prone in developing countries where instability through either high or volatile inflation or badly structured monetary and fiscal policies results in a high level of uncertainty, thus making their stock markets less attractive. In such scenarios, macroeconomic instability will have a negative impact on stock market capitalization and hence its development. On the other hand, an improvement in macroeconomic stability provides firms and investors with an incentive to participate in the stock market in anticipation of earning higher returns.

2.3.2 External Factors

Yartey (2008) shows the influence of private capital flows as a determinant of stock market development. He highlights the impact of foreign investors and how they have become major participants in emerging stock markets in the last few decades. Foreign investment has been noted to be associated with institutional and regulatory reform, while also providing for strict disclosure requirements and fair trading practices. Overall, this increase in both informational and operational efficiency will boost confidence in the local markets, which in turn will result in an increase in the number of investors.

2.3.3 Financial Intermediary Development

Another factor to take note of is that of financial intermediary development. Both stock markets and banks intermediate savings towards investment, and hence they may be

either complements or substitutes towards each other. On one hand the banking system may be seen to play a critical role in mobilizing savings and allocating funds to the most profitable activities, while on the other hand the capital market is said to play an important substitution role to the banking sector in the sense that it facilitates risk sharing, expands the scope of opportunities for raising capital and hence helps reduce the cost of capital. In light of its complementary role, an efficient banking system would help to facilitate the transaction procedures by improving the clearing and settlement process, thus reducing transactions costs and the time frame to settle.

However, if the banking system had to be underdeveloped, sluggish trading activity may be experienced in the market. As such, investors who wish to diversify their funds in an effort to obtain a lower-risk portfolio may spread their savings between the banking sector and the stock market.

2.4 Empirical Studies

Morales (2007) examined the dynamic relationship between exchange rates and market capitalization in four Easter European markets, Czech Republic, Hungary, Poland and Slovakia, using stock price and exchange rate data from these countries, as well as market capitalization 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 cointegration 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 market capitalization and exchange rates moving together either in the long run or in the short-run, with the exception of Slovakia, where cointegrating relationships were found.

Further study by Alagidede, Panagiotidis and Zhang (2010) investigated the nature of the causal linkage between stock markets and foreign exchange markets in Australia, Canada, Japan, Switzerland, and UK from 1992 to 2005. Recently developed cointegration tests were employed and no evidence of a long-run relationship between the variables was found. Three variations of the Granger causality test were carried out and causality from exchange rates to stock prices was found for Canada, Switzerland, and United Kingdom; weak causality in the other direction was found only for Switzerland. Their paper examined the causality between exchange rates and stock prices in Australia, Canada, Japan, Switzerland, and UK in a linear and nonlinear framework. They provided evidence that there is no long-run relationship between the two variables using two cointegration approaches and an extended datasets.

Sekmen (2011) examined the effects of exchange rate volatility, using the squared residuals from the autoregressive moving average (ARMA) models, on stock returns for the U.S. for the period 1980 to 2008. The study tested the effect of exchange rate volatility on the profits of firms in the U.S. using the squared residuals from the ARMA model to generate estimates of volatility. Overall, the study found that exchange rate volatility negatively affected U.S. stock returns since the availability of hedging instruments could not lessen the negative effect of exchange rate volatility on trade volume.

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In another study in Turkey, Yıldız and Ulusoy (2011) examined the effect of exchange rate volatility on Turkish stock returns using monthly data for the period 1987-2010. The squared residuals from the Autoregressive Moving Average (ARMA) models were used to generate a measure of exchange rate volatility and then tested against Turkish stock returns. The monthly closing index values of the Istanbul Stock Exchange 100 Index (ISE) were used in order to obtain Turkish stock returns. The results of the study emphasized that Turkish exporters did not consider exchange rate uncertainty as a crucial problem.

Olugbenga (2012) examined the long-run and short-run effects of exchange rate on stock market development in Nigeria over 1985–2009 using the Johansen cointegration tests. A bi-variate model was specified and empirical results showed a significant positive stock market performance to exchange rate in the short-run and a significant negative stock market performance to exchange rate in the long-run. The Granger causality test showed strong evidence that the causation runs from exchange rate to stock market performance. This implied that variations in the Nigerian stock market are explained by exchange rate volatility. The study concluded that the negative influence of exchange rate on Nigerian stock market performance could have been a result of heavy devaluation of the currency since the introduction of the structural adjustment programme in 1986.

Alam, Uddin and Taufique (2007) examined the empirical relationship between exchange rate and stock prices on the JSE. The sample of the study included the daily price indices of all securities listed on the JSE for the period since January 2000 to December 2004. The hypothesis of the study was whether the Johannesburg stock exchange is

informationally efficient (Weak form and Semi-strong forms). The results from the unit root test, the ADF test and the causality test at the Granger sense provide evidence that the Johannesburg Stock Exchange (JSE) is informationally efficient such that nobody can use the exchange rate to forecast or predict stock prices in the Johannesburg Stock Exchange. This showed that there is a relationship between the two variables. However, Alam et al., (2007) admitted that their study deserves continuous research in this area in order to reach the ultimate conclusion about the level of efficiency of emerging markets.

In Kenya, Sifunjo (1999) examined the causal relationship between exchange rate and stock prices at NSE between November 1993 and May 1999. He studied the monthly average stock prices index and nominal dollar exchange rates by employing co-integration and error-correction methodology. Sifunjo found that exchange rate and stock prices are cointegrated, non-stationary in first difference and integrated of order one. The result showed a unidirectional causality from exchange rate to stock prices. However, the results from Sifunjo study could have been obsolesced by passage of time owing to integration of NSE stock automation by Central Depository System (CDS) and change in foreign exchange market. For example, the shilling's real exchange rate has experienced a strong appreciation between 2004 and 2007 of 30.0% representing a major deviation from its past levels (Choudhry & Hasan, 2007). This has brought about significant changes in the terms of trade, degree of openness and the level of external inflows.

Anene (2011) looked at the causal relationship between the exchange rates (Kshs/USD) and stock prices in Kenya over the period 1 January, 2005 up to 31 December 2009. To measure causality between the stock market and exchange rates, the Granger Causality

(GC) Model was used as it tests whether or not one variable is the cause of the other, vice versa, or neither. The study found a unidirectional causality from Exchange rate (XRATE) to Market stock price (MRT) i.e (XRATE $\rightarrow$ MRT) and concluded that in Kenya foreign exchange granger caused stock exchange markets from 2005 to 2009 with the reverse being untrue. The study, therefore, recommended that management at NSE should create effective 'fuse breakers' in the stock market that would reduce irrational investor's panic that would make low performance of Kenyan Shilling in the international market lead to decrease in the value of stocks at NSE.

Ambunya (2012) examined the relationship between exchange rate movement and stock market returns volatility at the Nairobi Securities Exchange in Kenya. The study concludes that there is a strong relationship between exchange rate movement and stock market returns volatility. This was especially carried through the information content of exchange rate movement on the security's business. Further, the study concluded that exchange rate volatility also affected the stock market performance greatly through its spiral effects. Through macroeconomic variables, exchange rate volatility indicates the state of the economy hence the likely future state of the economy. These variables would include things like the interest rate and the money supply in the economy, which has great impact on the activity level of the security's performance.

Mambo (2012) did an analysis of the relevance of the monetary approach to Kenya's balance of payments for the period (1969-2002). This study examines the relevance of the monetary approach to the balance of payments in Kenya using annual data covering the period 1969 to 2002. The study used the monetary approach, which is one of five

approaches to the balance of payments and holds that the balance of payments is essentially a monetary phenomenon. The others are the Keynesian, elasticity, absorption and the portfolio balance approaches. The data was tested for unit root tests and co integration, among the variables established and thus a vector error correction (VEC) model was estimated. The results of the VEC estimation indicated that BOP is significantly affected by its own second and third lags, the first and second lags of exchange rate and the first lag of prices. Granger causality tests showed no causality between balance of payments and the other five variables. However, impulse response analysis indicated five years as the period within which balance of payments responded to innovations. Domestic credit and interest rate were the two important variables affecting Kenya's balance of payments. Exchange rate and prices were also significant. The study found the monetary approach relevant in managing Kenya's BOP

Barasa (2013) studied the relationship between exchange rate volatility and balance of payments in Kenya, for the period between the years 2001 and 2012. He collected monthly data on the exchange rates and BOP for the 12 years period and conducted a regression analysis to establish the extent of relationship between exchange rate volatility and BOP. The study concluded that just as the basic determinants behind the supply of and demand for any commodity are critical in fully understanding the behavior of the prices of that commodity, so it is important to understand the relationship between the supply of and demand for foreign exchange to determine the price of a foreign currency. The exchange rate affects the prices at which a country trades with the rest of the world and is integral economic analysis and policy formulation. From the findings discussed in

chapter four, the study concludes that there is a direct relationship between foreign exchange rates volatility and balance of payments.

2.5 Summary of Literature Review

This chapter has discussed literature related to market capitalization and its determinants. It started by looking at the theoretical review where it reviewed three theories including flow-oriented model, stock oriented model and the arbitrage pricing model. The chapter also discussed the several studies that have been done on the subject of exchange rate fluctuations and market capitalization. Alam et al., (2007) examined the empirical relationship between exchange rate and stock prices on the JSE.

Locally, Barasa (2013) studied the relationship between exchange rate volatility and balance of payments in Kenya, for the period between the years 2001 and 2012. Ambunya (2012) examined the relationship between exchange rate movement and stock market returns volatility at the Nairobi Securities Exchange in Kenya. Anene (2011) looked at the causal relationship between the exchange rates (Kshs/USD) and stock prices in Kenya over the period 1 January 2005 up to 31 December 2009. From the above discussions, it was evident that further study needs to be done to establish the effect of fluctuations in exchange rate on market capitalization at the Nairobi Securities Exchange.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter consists of the research methodology that will be used in the study. This includes the research design, target population, data collection and data analysis.

3.2 Research Design

The study was a descriptive case study. It involved calculation of measures of central tendency like mean and variability like standard deviation, as well as other measures of significant differences or relationships among the variables under study (Cooper & Schindler, 2003). More so, a case study is important for analyzing information in a systematic way to come up with useful conclusions and recommendations.

The case study method is ideal when a 'how' or 'why' question is being asked about a contemporary set of events over which the researcher has no control. Further statistical procedures was used to answer the research question. This design allowed the researcher to measure and analyze the data. The relationship between the variables was studied in detail to make an objective and conclusive findings of the research.

3.3 Data Collection

The study used secondary data collected from the Nairobi Securities Exchange and other Government Agencies. The use of secondary data was justified on the basis that some of these sources have information that is very pivotal to this study and has been vetted and accepted. The study used monthly average market capitalization for the period 2012 to 2014.

3.4 Data Analysis

The researcher collected data on exchange rate fluctuations for the Kenyan currency (Kshs) against the United States dollar (USD). The market capitalization was obtained by computing the monthly market value of outstanding shares for all the 61 firms, listed at the Nairobi Securities exchange, for the period 2012 to 2014. Using this data, the study conducted a regression analysis to establish the extent of relationship between fluctuations in exchange rate and market capitalization.

3.4.1 Analytical Model

The study applied the following regression model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where Y = Total Market Capitalization [Total stock prices X number of outstanding shares]

And X_1 = the monthly exchange rate fluctuations

X_2 = the monthly average rate of inflation

X_3 = the monthly average interest rate

B_0 is the constant

β_1, β_2, and β_3 are co-efficient of the variables,

X_2 and X_3 are control variables

ε is the error term

3.4.2 Significant Test

The study carried out a T-test at 95% confidence level to establish the significance of the

independent variable in explaining the changes in the dependent variable.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents findings from analyzed secondary data. Descriptive statistics and model results are presented. This chapter also includes results interpretation and summary of the findings.

4.2. Descriptive Statistics

Descriptive statistics presents the mean, maximum and minimum values of variables used in this study together with their standard deviations.

Table 4.1: Total Market Capitalization

Month/Year	Total Market Capitalization					
	2012		2013		2014	
	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.
January	3224.18	321.12	4417	199.49	4856	138.61
February	3303.75	321.67	4519	202.34	4933	136.06
March	3366.89	327.12	4861	204.11	4946	154.15
April	3546.66	328.10	4765	199.36	4949	140.26
May	3650.85	325.33	5006	201.51	4882	141.12
June	3703.94	330.88	4598	202.80	4885	143.66
July	3832.42	327.63	4788	198.39	4906	144.01
August	3865.76	320.17	4698	197.34	5139	141.78
September	3972.03	322.42	4793	205.74	5256	145.67
October	4147.28	320.57	4936	202.60	5195	140.21
November	4083	324.10	5101	202.58	5156	142.18
December	4133	324.67	4927	201.69	5113	140.23
Ave. monthly	3735.81	324.48	4784.08	201.49	5018	142.33

Table 4.1 presents the findings on the descriptive statistics for total market capitalization for the years 2012-2014. Market capitalization is the total value of all of a company's shares of stock given by multiplying the price of a stock by its total number of outstanding shares. The means portray a steady increase in the market value for all the 61 firms listed at the Nairobi Securities exchange with the lowest being 3735.8133 in the year 2012 and the highest being 5018.0000 in 2014. Additionally the scores of standard deviation indicate variation in market capitalization for the various listed firms statistically.

Table 4.2: Monthly Exchange Rate Fluctuations

Month/Year	Monthly Exchange Rate Fluctuations					
	2012		2013		2014	
	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.
January	80.421	0.866	84.859	1.240	79.664	1.436
February	79.575	2.104	85.031	1.128	87.577	1.422
March	83.808	1.114	89.507	1.295	86.786	1.307
April	92.696	1.093	83.827	1.116	87.841	1.488
May	101.162	0.840	84.601	1.243	91.446	1.439
June	78.728	1.227	80.470	0.991	78.169	1.797
July	82.961	2.104	83.740	1.493	87.490	1.429
August	88.887	1.123	83.827	1.530	78.169	1.264
September	87.194	1.094	85.031	1.241	105.515	1.267
October	74.664	1.287	85.204	1.093	91.358	1.387
November	82.115	1.202	91.228	1.356	93.732	1.418
December	83.638	0.798	95.445	1.200	87.402	1.599
Ave. monthly	**84.6542**	**1.23769**	**86.064**	**1.244**	**87.929**	**1.438**

The findings in Table 4.2 represent the descriptive statistics findings for the monthly exchange rate fluctuations at the Nairobi securities exchange. According to the findings, the exchange rate fluctuations was highest in 2014 as indicated by the mean score 87.9292, followed by 2013 mean score of 86.0642 and lastly in 2012 with a mean score of 84.6542. The low standard deviation indicates a low variation in monthly exchange rate fluctuations for the periods statistically.

Table 4.3: Monthly Average Rate of Inflation

Month/Year	Monthly Average Rate of Inflation					
	2012		2013		2014	
	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.
January	9.630	5.399	5.709	1.639	6.877	0.706
February	9.534	5.404	5.709	1.669	6.740	0.770
March	9.245	5.410	5.709	1.671	6.671	0.691
April	9.438	5.421	5.709	1.659	6.602	0.684
May	9.534	5.426	5.709	1.505	6.533	0.748
June	9.804	5.431	5.709	1.458	7.359	0.670
July	10.305	5.437	5.709	1.484	6.395	0.663
August	10.315	5.878	5.709	1.674	6.327	0.727
September	10.199	5.557	5.709	1.725	6.939	0.770
October	8.474	5.720	5.709	1.926	7.201	0.711
November	9.563	5.448	5.778	1.673	6.850	0.710
December	9.640	4.843	5.709	2.009	8.116	0.711
Ave. monthly	**9.6400**	**5.44780**	**5.7150**	**1.67446**	**6.8842**	**.71336**

The findings in table 4.3 relate to the monthly average rate of inflation for the period of 2012-2014. The results indicate fluctuations in the rate of inflation, the mean of 9.6400 to 2012 and 5.1750 in 2013 depicts a decrease in the rate of inflation, which later rises as shown by the mean of 6.8842 in 2014. The standard deviation depicts a variation in monthly average rate of inflation amounts in the Nairobi Securities Exchange.

Table 4.4: Monthly Average Interest Rate

Month/Year	Monthly Average Interest Rate					
	2012		2013		2014	
	Mean	Std Dev.	Mean	Std Dev.	Mean	Std Dev.
January	24.854	0.718	17.123	0.463	16.291	0.513
February	21.086	0.711	16.777	0.458	15.961	0.502
March	18.916	0.703	16.603	0.453	17.444	0.497
April	18.719	0.696	16.430	0.449	15.632	0.492
May	20.494	0.689	16.257	0.444	17.114	0.481
June	18.325	0.682	16.084	0.439	17.361	0.476
July	18.127	0.674	15.911	0.435	15.137	0.516
August	17.733	0.667	17.486	0.430	16.439	0.517
September	22.684	0.748	21.468	0.482	17.460	0.565
October	20.317	0.915	20.603	0.479	16.389	0.549
November	15.721	0.783	15.703	0.615	17.131	0.560
December	15.721	0.726	17.310	0.468	15.302	0.551
Ave. monthly	**19.725**	**0.726**	**17.313**	**.46777**	**16.4717**	**.51828**

As per the findings, monthly average interest rate at the Nairobi Securities Exchange reflects an decrease over the 3 year period, with the highest being 19.7250 in 2012, followed by 17.3133 in 2013 and 16.4717 in 2014. Moreover, the standard deviation shows a variation in monthly average interest rate in the different 61 firms listed at NSE.

4.3 Inferential statistics

4.3.1 Correlation Analysis

To quantify the strength of the relationship between the variables, the study used Karl Pearson's coefficient of correlation. The Pearson product-moment correlation coefficient (or Pearson correlation coefficient for short) is a measure of the strength of a linear association between two variables and is denoted by r. The Pearson correlation coefficient, r, can take a range of values from +1 less than 0 indicates a negative association, that is, as the value of one variable increases the value of the other variable decreases.

The Pearson's coefficient was used to verify the existence or non-existence to -1. A value of 0 indicates that there is no association between the two variables. A value greater than 0 indicates a positive association, that is, as the value of one variable increases so does the value of the other variable. The findings are presented as follows;

Table 4.5: Correlations

		Total Market Capitalization	Monthly Exchange Rates Fluctuations.
Total Market Captitalization	Pearson Correlation	1	.774[**]
	Sig. (2-tailed)		.003
Monthly Exchange Rate Fluctuations	Pearson Correlation	.774[**]	1
	Sig. (2-tailed)	.003	

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

From the findings, it was clear that there was positive correlation between the variables total market capitalization and monthly exchange rate fluctuations (0.774). However, there is some evidence of multicollinearity among the explanatory variables since the correlations among them are strong hence all the variables can be incorporated into the subsequent regression analysis.

4.3.2 Regression Analysis

In determining the effect of fluctuations in exchange rate on market capitalization for all firms listed at the NSE, the study conducted a multiple regression analysis to determine the nature of relationship between the variables. The regression model specification was as follows;

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$

Where Y = Total Market Capitalization [Total stock prices X number of outstanding shares]

And X_1 = the monthly exchange rate fluctuations

X_2 = the monthly average rate of inflation

X_3 = the monthly average interest rate

β_0 is the constant

β_1, β_2, and β_3 are co-efficient of the variables,

X_2 and X_3 are control variables

ε is the error term

The study applied the statistical package for social sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study. Findings are presented in the following tables;

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.993[a]	.986	.981	44.30811

a. Predictors: (Constant), monthly exchange rate fluctuations, monthly average rate of inflation, monthly average interest rate

In this case, the coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variables) R2 equals 0.986, that is, monthly exchange rate fluctuations, monthly average rate of inflation, monthly average interest rate explain 98.6 percent of the variance in Total Market Capitalization for the period under review.

Table 4.7: ANOVA[a]

Model	Sum of Square	df	Mean Square	F	Sig.
Regression	1142477.756	3	380825.919	193.981	.000[b]
1 Residual	15705.668	32	1963.208		
Total	1158183.424	35			

a. Dependent Variable: Total Market Capitalization

b. Predictors: (Constant), monthly exchange rate fluctuations, monthly average rate of inflation, monthly average interest rate

From the analysis of variance in table 4.7, the F Test of 193.981 indicates that the regressions explanatory power on the overall significance was strong. The significance value of 0.00 obtained implies that the regression model was significant in predicting the relationship between fluctuations in exchange rate on market capitalization for all firms listed at the NSE and the predictor variables as it was less than $\alpha = 0.05$. This significance

level means that the chances are almost zero that the results of the regression model were due to random exogenous events instead of the true relationship existing in the model.

Table 4.8: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2921.680	1510.844		1.934	.029
	monthly exchange rate fluctuations	18.359	14.417	.070	1.273	.039
	monthly average rate of inflation	-55.809	3.278	-.937	-17.025	.000
	Monthly average interest rate	-10.241	25.912	-.023	-.395	.003

a. Dependent Variable: Total Market Capitalization

Table 4.8 interprets the standardized regression coefficients (Beta). In estimating the contribution of each of the independent variables to the study it was established that all the independent variables had a significant contribution to the variance of the dependent variable at a significance level of 0.05.

The relative importance of each of the independent variables was however different. According to the equation, taking all factors (monthly exchange rate fluctuations, monthly average rate of inflation, monthly average interest rate) constant at zero, market capitalization will be 2921.680. The data findings also show that a unit increase in monthly exchange rate fluctuations will lead to an 18.359 increase in market

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capitalization; a unit increase in monthly average rate of inflation will lead to a 55.809 decrease in market capitalization while a unit increase in monthly average interest rates will lead to a 10.241 decrease in market capitalization.

4.4 Discussion of findings

The objective of the study was to assess the effect of fluctuations in exchange rate on market capitalization at the Nairobi Securities Exchange. The objective was assessed by use of secondary data and the subsequent analyses based on the variables of the study.

From the findings, it was clear that there was positive correlation between the variables total market capitalization and monthly exchange rate fluctuations (0.774). The coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variables) R^2 was found to be equals to 0.986, that is, monthly exchange rate fluctuations, monthly average rate of inflation, monthly average interest rate explain 98.6 percent of the variance in total market capitalization for the period under review. This contrast with Morales (2007) who examined the dynamic relationship between exchange rates and market capitalization in four Easter European markets, Czech Republic, Hungary, Poland and Slovakia, using stock price and exchange rate data from these countries, as well as market capitalization from the United States, Germany and the United Kingdom. The findings of the study showed that there is no evidence of market capitalization 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.

From the analysis of variance, the F Test of 193.981 indicated that the regressions explanatory power on the overall significance was strong. The significance value of 0.00 obtained implies that the regression model was significant in predicting the relationship between fluctuations in exchange rate on market capitalization at the NSE and the predictor variables as it was less than $\alpha = 0.05$. This significance level means that the chances are almost zero that the results of the regression model were due to random exogenous events instead of the true relationship existing in the model.

In estimating the contribution of each of the independent variables to the study it was established that all the independent variables had a significant contribution to the variance of the dependent variable at a significance level of 0.05. The relative importance of each of the independent variables was however different.

Taking all factors (monthly exchange rate fluctuations, monthly average rate of inflation, monthly average interest rate) constant at zero, market capitalization will be 2921.680. The data findings also showed that a unit increase in monthly exchange rate fluctuations would lead to an 18.359 increase in market capitalization; a unit increase in monthly average rate of inflation will lead to a 55.809 decrease in market capitalization while a unit increase in monthly average interest rates will lead to a 10.241 decrease in market capitalization. Similarly, Sekmen (2011) on examining the effects of exchange rate volatility, using the squared residuals from the autoregressive moving average (ARMA) models, on stock returns for the U.S. for the period 1980 to 2008 found that exchange rate volatility negatively affected U.S. stock returns.as variability of hedging instruments could not lessen the negative effect of exchange rate volatility on trade volume.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECCOMENDATIONS

5.1 Introduction

This chapter summarizes the study and makes conclusions based on the results of the study. Policy recommendations, limitations of the study and recommendations for further research are also presented. This section also presents the findings from the study in comparison to what other scholars have concluded as noted under literature review.

5.2 Summary

From the findings the total market capitalization for the years 2012-2014 experienced a steady increase for all the 61 firms listed at the Nairobi Securities exchange with the lowest being 3735.8133 in the year 2012 and the highest being 5018.0000 in 2014. This implies that the firms underwent growth in terms of their market value.

The exchange rate had increased over the years under study, it was highest in 2014 as indicated by the mean score 87.9292, followed by 2013 mean score of 86.0642 and lastly in 2012 with a mean score of 84.6542.

The study determined that there were fluctuations in the monthly average rate of inflation for the period of 2012-2014. The mean of 9.6400 in 2012 and 5.1750 in 2013 depicts a decrease in the rate of inflation, which later rose to a mean of 6.8842 in 2014.

The study also found out that the monthly average interest rate decreased over the 3 year period, with the highest being 19.7250 in 2012, followed by 17.3133 in 2013 and 16.4717 in 2014.

From the findings, it was clear that there was positive correlation between the variables total market capitalization and monthly exchange rate fluctuations (0.774). The coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variables) R2 was found to be equals to 0.986, that is, monthly exchange rate fluctuations, monthly average rate of inflation, monthly average interest rate explain 98.6 percent of the variance in total market capitalization for the period under review.

From the analysis of variance, the F Test of 193.981 indicated that the regressions explanatory power on the overall significance was strong. The significance value of 0.00 obtained implies that the regression model was significant in predicting the relationship between fluctuations in exchange rate on market capitalization for all firms listed at the NSE and the predictor variables as it was less than $\alpha = 0.05$. This significance level means that the chances are almost zero that the results of the regression model were due to random exogenous events instead of the true relationship existing in the model.

In estimating the contribution of each of the independent variables to the study, it was established that all the independent variables had a significant contribution to the variance of the dependent variable at a significance level of 0.05.

The relative importance of each of the independent variables was however different. Taking all factors (monthly exchange rate fluctuations, monthly average rate of inflation, monthly average interest rate) constant at zero, market capitalization will be 2921.680. The data findings also showed that a unit increase in monthly exchange rate fluctuations

would lead to an 18.359 increase in market capitalization; a unit increase in monthly average rate of inflation will lead to a 55.809 decrease in market capitalization while a unit increase in monthly average interest rates will lead to a 10.241 decrease in market capitalization.

5.3 Conclusion

This study examined the effect of fluctuations in exchange rate on market capitalization at the Nairobi Securities Exchange using monthly time series data from 2012-2014. In this study, the dependent variable was market capitalization, monthly exchange rate fluctuations was the independent variable, while monthly average rate of inflation, monthly average interest rate were control variables.

The study concluded that there was a steady increase in the market value, exchange rate fluctuations for all the 61 firms listed at the Nairobi Securities exchange from the year 2012 to 2014. The interest rate on the other hand decreased over the three year period. The study further concluded that the three-year period experienced fluctuations in the rate of inflation.

The study also concluded that there was positive correlation between the variables total market capitalization and monthly exchange rate fluctuations (0.774). The independent and control variables were found to be statistically significant determinants of market capitalization of firms listed at the Nairobi Securities Exchange. In this study, a conclusion was drawn that the fluctuations in the exchange rate is a major determinant of the market capitalization at the Nairobi Securities Exchange.

5.4 Policy Recommendations

According to the regression results, an increase in monthly exchange rate fluctuations would lead to a significant positive influence on market capitalization. The study therefore recommends that the management of the firms should implement policies on growth of the market value of the firm during the periods of high exchange rate to enjoy the benefits that come with such seasons.

An increase in the monthly average rate of inflation was found to negatively affect market capitalization. This study therefore recommends that the Central Bank of Kenya (CBK) and other regulators should plan and influence the macro-economic variables such as inflation. For instance, the economy should have sufficient money supply to ensure that there is enough money to conduct trade in the economy.

Finally, an increase in the monthly average interest rates was also found to negatively affect market capitalization of the firms. In light of this, the study recommends that the management of the listed firms should address or monitor the levels of debt financing utilized by their firms in order to ensure that it does not adversely affect their firm's market capitalization.

5.5 Limitations of the Study

This study was limited to the extent that not all the factors affecting market capitalization at the Nairobi Securities Exchange in Kenya were considered in the model mainly due to limitations of data.

The study was based on a three year period from 2012 to 2014. A longer duration of the study would have captured periods of various economic significance such as booms and recessions. This would have given a longer time focus hence it would have given a broader dimension to the research problem.

The time taken to carry out this study was in no means sufficient for the amount of detail and analysis the study involved. With more time, detailed tests could be conducted to determine whether the same conclusions could have been derived with more variables included in the research model.

5.6 Suggestions for Further Studies

The study suggests that further readings should explore on the specific factors that affect each of the study variables. For instance, further studies should aim to establish the determinants of monthly exchange rate fluctuations, monthly average rate of inflation and monthly average interest rate.

In addition, future studies should include comparison of a simultaneous comparison of the effect of the exchange rate fluctuations variables on market capitalization performance.

Other studies can perform a comparison of different markets as this study only looked at listed firms in the Nairobi Securities Exchange. This can help reach concrete conclusions as regards the subject of the study.

This study covered a three year period, it is therefore suggested that other study be undertaken on effect of fluctuations in exchange rate on market capitalization at the Nairobi Securities Exchange for longer periods of time, for instance 5 year period.

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APPENDICES

APPENDIX I: DATA USED

	Total Market Capitalization			Exchange Rate Fluctuations			Average Rate of Inflation			Average Interest Rate		
	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
January	3224.2	4417.0	4856.0	80.4	84.9	79.7	9.6	5.7	6.9	24.9	17.1	16.3
February	3303.8	4519.0	4933.0	79.6	85.0	87.6	9.5	5.7	6.7	21.1	16.8	16.0
March	3366.9	4861.0	4946.0	83.8	89.5	86.8	9.2	5.7	6.7	18.9	16.6	17.4
April	3546.7	4765.0	4949.0	92.7	83.8	87.8	9.4	5.7	6.6	18.7	16.4	15.6
May	3650.9	5006.0	4882.0	101.2	84.6	91.4	9.5	5.7	6.5	20.5	16.3	17.1
June	3703.9	4598.0	4885.0	78.7	80.5	78.2	9.8	5.7	7.4	18.3	16.1	17.4
July	3832.4	4788.0	4906.0	83.0	83.7	87.5	10.3	5.7	6.4	18.1	15.9	15.1
August	3865.8	4698.0	5139.0	88.9	83.8	78.2	10.3	5.7	6.3	17.7	17.5	16.4
September	3972.0	4793.0	5256.0	87.2	85.0	105.5	10.2	5.7	6.9	22.7	21.5	17.5
October	4147.3	4936.0	5195.0	74.7	85.2	91.4	8.5	5.7	7.2	20.3	20.6	16.4
November	4083.0	5101.0	5156.0	82.1	91.2	93.7	9.6	5.8	6.8	15.7	15.7	17.1
December	4133.0	4927.0	5113.0	83.6	95.4	87.4	9.6	5.7	8.1	15.7	17.3	15.3