RELATIONSHIP BETWEEN CURRENCY SPREAD DETERMINANTS AND FINANCIAL PERFORMANCE OF FOREIGN EXCHANGE BUREAUS IN KENYA

BY

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DECLARATION

I declare that this project is my original work and has not been presented in any other institution for academic accreditation.

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APPROVAL

This research project has been submitted for examination with my approval as the Maseno University supervisor.

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DEDICATION

I dedicate this work to the Almighty God who has blessed me with life and good health, my Dad Lucas Ochieng and my Mother Zilper Oyoo for guidance throughout my studies, prayers, encouragement and tireless efforts to ensure I reach this far. My family friends and colleagues who supported me throughout the process, thank you all and may God bless you.

ABSTRACT

The major problem facing forex bureaus is a performance drop trend which has fallen to just 77 in 2017 from 80 in 2015 according to the report on financial sectors. Forex bureaus recorded an 80% drop in their total earnings by the end of the 2012 financial year as a result of the changes in regulations raising their operating expenses as well as the minimum capital requirement. By the end of the same year, their profits had plummeted to mere Ksh. 27 million from the Ksh. 136 million recorded the previous year. The purpose of the study was to assess the relationship between currency spread determinants and financial performance of foreign exchange bureaus in Kenya. The specific objectives were to; determine the relationship of market volatility on the financial performance of foreign exchange bureaus, establish the relationship of interest rates on the financial performance of foreign exchange bureaus, determine the relationship of Gross Domestic Product on the financial performance of foreign exchange bureaus and to establish the relationship of inflation on the financial performance of foreign exchange bureaus. A correlational research design was employed, with all the foreign exchange bureaus listed. The study was hinged on Purchasing Power and Balance of Payment Theories. The target population for the study was 76 licensed foreign exchange bureaus in the country and used a census of all the 76 forex exchange bureaus as the sample. The study made use of annual secondary data. A multiple regression analysis was used to analyse the relationship between the variables and ANOVA was used to establish the significance and fitness of the model. The findings showed that a change in one standard deviation in market volatility resulted in a change 0.091 standard deviation in profitability of EB; a change in one standard deviation in interest rates resulted in a change 0.097 standard deviation in profitability of EB; a change in one standard deviation in GDP growth rate resulted in a change -0.004 standard deviation in profitability of EB and a change in one standard deviation in inflation rate resulted in a change 0.091 standard deviation in profitability of EB. The study conclusions were borrowers or lenders needed to assess bureaus tolerance for variability in earnings before choosing a method for mitigating currency risk and adopt a strategy for managing currency risk consistent with the bureaus overall risk policy also forex bureaus should explore avenues to enhance capacities within them for managing foreign exchange risk; management should opt for cost effective strategies for more significant positive relationship between foreign exchange risk management and financial performance. The study suggested that for extension of the study by replicating this research to similar developing nations with comparative country-to-country studies.

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ABBREVIATIONS AND ACRONYMS

CBK	Central Bank of Kenya
SPSS	Statistical Package of Social Sciences
ANOVA	Analysis of Variance
EUR	Euro
USD	United States Dollar
NSE	Nairobi Securities Exchange
GDP	Gross Domestic Product
IMF	International Monetary Fund
KNBS	Kenya National Bureaus of Statistics
NSE	Nairobi Securities Exchange
PPP	Purchasing Power Parity
ROA	Return on Assets
ROE	Return on Equity

OPERATIONAL DEFINITION OF TERMS

Currency trade: Also called foreign exchange is financial market, trading world currencies.

Currency spread: Refers to the difference between a currency pair's bids and ask price.

Foreign exchange: Refers to the exchange of one currency for another or the conversion of one currency into another currency.

Foreign exchange bureaus: Is a business where people can exchange one currency for another.

Financial performance: Is a subjective measure of how well a foreign exchange can use assets from its primary mode of business and generate revenues. This will be measured based on the profitability of the foreign exchange bureaus

Market volatility: Refers to fluctuation of stock market over a given period of time where it goes up and down.

Interest rates: Refers to the amount charged, expressed as a percentage of principal, by a lender to a borrower for the use of assets.

Inflation: Refers to inflation a sustained increase in the general price level of goods and services in an economy over a period of time

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CHAPTER ONE

INTRODUCTION

This Chapter covers the background of the study, research problem, research objectives, research hypothesis, justification of the study and conceptual framework.

1.1 Background of the Study

Currency spread refers to the difference between a currency pair's bids and ask price. In particular, the bid price is the exchange rate at which the market maker will purchase the currency pair, while the ask price is the exchange rate at which they will sell the currency pair. According to Brucaite (2000), foreign exchange market makers and online foreign exchange brokers typically make their money by marking up the bid ask spread available to them in the professional Interbank foreign exchange market. Li (2003) opines that that the width of a foreign exchange trading spread quoted by a broker or market maker tends to relies on a number of factors. The first and foremost is the currency pair involved, since different currency pairs tend to have different average bid ask spreads. There has been decline on foreign exchange in the recent years. The latest triennial survey of the FX industry by the Bank for International Settlements (BIS) has revealed a decline in volumes for the first time in 15 years. Global currency trading volumes averaged $5.1 trillion per day in April 2016, a 5.6% fall from exactly three years earlier. The BIS points out there were a spike in yen trading activity in April 2013 due to monetary policy developments. Nevertheless, the fall in volumes is evidence of a broader slowdown. The simple exchange of one currency for another tumbled fell 15% to $1.7 trillion per day in April 2016 compared with $2 trillion in April 2013. Average daily spot turnover with hedge funds and proprietary trading firms on one side of the trade stood significantly fewer outright forwards and swaps, which plummeted by 29% and 37%, respectively.

On market volatility, according to studies such as Bahmani-Oskoee, 2007, when the market is quite and there is little activity the currency spread tends to decrease and the reverse effect is experienced when market uncertainities are present. When the market is highly volatile, foreign exchange traders make the most profit owing to the increased currency spread. However, a debate on whether market volatility is the most central reason for fluctuation in currency spread has not arrived at a conclusion. There is need to establish with substantial evidence the huge significance of market volatility in influencing the currency spread in the foreign exchange market over other factors something this study seeks to tackle.

Studies on interest rates such as Treepongkaruna, Brailsford& Gray, 2013 have shown the relationship between interest rates and currency spread is of the nature that an increase in interest rates attracts currency or capital from other countries that purchase that currency as investors seek to make returns from the increased interest rates decreasing the currency spread. However, little research exist to show how this relationship is affected in an interest capping regime where interest rates are predetermined by the central bank which will be studied in this study.

Further studies on GDP generally such as Saymeh & Orabi, 2013 have established that an increase in GDP strengthens the underlying currency against other currencies and consequently reducing currency spread. However, there stills a knowledge gap as to what index GDP should increase to have a notable influence on the value of the local currency and consequently a favourable influence on the currency spread. A gap also exists as to what percent the GDP should grow when increases in GDP are not going to have a significant impact on the value of the local currency because products are produced for local markets. These gaps are to be addressed in this study.

Finally on inflation studies such as Catao & Terrones, 2005 indicate that when the inflation rate is high, the exchange rate falls and the currency spread increases because many traders are not willing to hold on to cash for a long time and may be willing to offer it at prices that are low, because

when the supply is high than the demand the price drops. However, there has not been substantial research done to determine the direct correlation between unanticipated inflation and currency spread (whether an increase in unanticipated inflation increases the currency spread or a decrease in unanticipated inflation gives a reverse effect on currency spread) which this study wishes to determine.

Globally, the most liquid currency pairs, such as the major currency pairs like EUR/USD and USD/JPY, tend to have the tightest quoted dealing spreads. This is because they have the highest number of active market makers who see considerable trading volume in those currency pairs each trading day and these traders often compete with each other for customer business by showing clients tighter dealing spreads. Dealing spreads also tend to decrease in a market with a higher volume because this implies that more traders are involved as buyers and sellers in such a market. This raises the chances of a market maker finding interested buyers and sellers at a particular point in time. Another important factor that affects the prevailing foreign exchange spread being charged by market makers and brokers is the current level of market volatility. This is closely related to the risk of sharp exchange rate movements, which also tends to influence the width of the bid ask spread since market makers quoting prices in a volatile market take on a greater risk in doing so and so quote wider prices to compensate (Danish, 2012).

Specifically, exchanges and their markets are designed not for speculation but to transfer risk from one party to another; speculation made them more efficient through increased volume and tighter price spreads (bid/ask). Commercial trading companies and financial institutions apply hedging (long/short positions) to reduce their exposure and offset risk to their principal underlying positions across every type of commodity or financial instrument. This risk-averse approach is the driving force to their market activity and success (Cooper, 2003). The market value of the firm is an important determinant of the spread since it reflects the depth of the demand for the stock.

Traditionally high value firms enjoy deep markets for their stock. Their equity is traded frequently by a large number of agents; performance is closely monitored by analysts reducing the incidence of potential information asymmetry. These stocks a therefore highly liquid as market makers need not expose their portfolios to the risk of adverse selection and unwanted inventory. We therefore expect that the equity of large firms will enjoy lower spread (Murthy, 2003).

Currency spread is regarded to be the sensitivity of foreign exchange bureaus' cash flows, as well as the real domestic currency value of assets and liabilities, notwithstanding the operating incomes to unanticipated changes in exchange rates (Adler & Dumas, 2009). The adoption of a floating exchange rate regime, the rapid globalization of national economies as well as the attempts by multinationals to seek investment opportunities while adopting markets that are far beyond their immediate borders has accounted for the increasing exposure of firms to Currency spread risk in recent times.

According to the Central Bank of Kenya (2011), authorized foreign exchange bureaus' in Kenya are licensed to buy, sell, borrow or lend in foreign currency or transact any other business involving foreign currency. This presumably is to allow them hedge against the effects of currency spread risk. The effects of currency spread risk can be revealed by measuring the returns and noting their changes relative to the exchange rate fluctuations rates. Exchange rate fluctuations influence operating cash flows as well as the value of the firm via translation, transaction, and economic effects of exchange rate risk exposure (Choi & Prasad, 2005).

Chamberlain *et al*., (2009) argued that Currency spread rate fluctuations influence foreign exchange bureaus both directly and indirectly. The direct effect emanates from foreign exchange bureaus that hold assets or liabilities via net payment streams which are denominated in a foreign currency. They further argued that Currency spread rate fluctuations alter the domestic currency values of such assets. This therefore means that the explicit source of Currency spread risk is the

easiest to identify, and it is considered to be the most easily hedged. Schmidt (2010) opines that a bank lacking in foreign assets or liabilities can be exposed to currency risk, thus the indirect effect of exchange rates. The argument is that exchange rate fluctuations are likely to affect the profitability of a bank's domestic operations. This can be explained through an example; let us consider the value of a bank's loan to a Kenyan importer. An appreciation of the dollar is likely to make it more difficult for the importer to compete against foreign firms.

It may be argued that foreign exchange bureaus take part in the forex market trade with a bid to hedge against adverse effects of forex linked volatility. Allayannis & Ofek *et al.,* (2011) indicate that firms making use of derivatives are likely to have a higher market value. Graham & Rogers (2012) on their part are of the opinion that firms that employ the use of derivatives are highly leveraged. This approach also means that hedging brings about lower volatility of cash flow and therefore lower volatility of firm value. The ultimate result of hedging, if it indeed is beneficial to the firm, needs to be higher value. It can therefore also be argued that forex trading as a portfolio risk diversification has no effect on financial performance. This argument would be in line with Miller & Modigliani (1958) who state that the market value of firms is independent of how it is financed.

Whether from direct or indirect sources, currency spread exposure will be reflected in the behaviour of returns and or performance of the bank. It therefore means that the sensitivity of exchange rate and that of a bank's equity returns provides a comprehensive measure of its Currency spread exposure. In order to measure the exchange rate sensitivity of the foreign exchange bureaus'' equity returns, this study measures the foreign exchange bureaus'' equity performance. Profitability measures are used to establish the extent to which the businesses generate a profit from the use of land, labour, management, and capital. Profitability is measured by determining the net firms' income from operations (NFIFO), rate of return on firms' assets

(ROA), rate of return on firms' equity (ROE) and operating profit margin (OPM) (Miller, 2003). Net revenues available from normal operations after fixed and variable expenses are deducted, are calculated on an accrual basis. Operating profit margins are used to reflect the ability of the foreign exchange bureaus'' to generate revenues and control costs. Return on Assets measures are used to ascertain the profitability of the firm in relation to total assets employed. Net firm income from operations is the net income generated by all assets, after labour has been compensated but before interest payments.

In Kenya foreign exchange market characterizes high completion and as brokers are trying to stay closer to customers, spread tends to be fixed on lowest possible level. As such, each trader pays sufficient attention to spread management. Particularly, there are several factors that influence the size of the bid-offer spread. The most important is currency liquidity. Popular currency pairs are traded with lowest spreads while rare pairs raise dozen pips spread. Next factor is amount of a deal. Middle size spot deals are executed on quotations with standard tight spreads; extreme deals both too small and too big are quoted while broader spreads due to risks involved. On volatile market bid-offer spreads are wider than during quiet market conditions. Status of a customer also impacts spread as large-scale traders or premium clients enjoy personal discounts. It is against this backdrop that the current study intends to investigate the relationship between currency spread and financial performance of Foreign Exchange bureaus listed in Nairobi Securities Exchange in Kenya.

Forex bureaus consider a number of factors when setting prices for currencies. Just like any other industry, the foreign exchange market strives to stay close to their customers by setting the lowest spread possible. They look at several components of market volatility and stay on the lookout for unprecedented movement of exchange rates in the global currency exchange market. Interest rates is also a point of interest for forex traders. When the interest rates are increased, lenders get more

incentive to put more money up for borrowing, consequently more capital is attracted from foreign countries raising the exchange rate and reducing the currency spread. This determinant employed by forex bureaus need to be examined in detail to establish which among them is more highly revered by the forex bureau in determining the currency spread to a more favourable performance in the long run to be established in this study.

However, a debate on whether market volatility is the most central reason for fluctuation in currency spread has not arrived at a conclusion. There is need to establish with substantial evidence the huge significance of market volatility in influencing the currency spread in the foreign exchange market over other factors something this study seeks to tackle. In addition, little research exist to show how this relationship is affected in an interest capping regime where interest rates are predetermined by the central bank which will studies in this study. A gap also exists as to what percent the GDP should grow when increases in GDP are not going to have a significant impact on the value of the local currency because products are produced for local markets. These gaps are to be addressed in this study. However, there has not been substantial research done to determine the direct correlation between unanticipated inflation and currency spread (whether an increase in unanticipated inflation increases the currency spread or a decrease in unanticipated inflation gives a reverse effect on currency spread) which this study wishes to determine.

1.2 Research Problem

On a financial performance perspective, the number of forex bureaus in Kenya has fallen to just 77 in 2017 from 80 in 2015 according to the report on financial sectors released by the central bank. Forex bureaus have recorded an 80% drop in their total earnings by the end of the 2012 financial year as a result of the changes in regulations by the Central Bank of Kenya raising their operating expenses as well as the minimum capital requirement. By the end of the same year, their profits had plummeted to mere Sh. 27 million from the Sh. 136 million recorded the previous year.

Although in 2017 there was a recorded increase in total income from Sh. 797 million to Sh. 1.20 billion the expenses almost increased by a double figure from Sh. 661 million to Sh. 1.27 billion. In a recent forex annual report, the forex market has recorded low multi-currency spreads and limited capital. More forex bureaus are facing an exit due to the high cost of business and the decreased volumes of sales. Consequently, this study posed the question: What is the relationship between currency spread determinants and financial performance of foreign exchange bureaus in Kenya?

1.3 Research Objectives

The main Objective of the study was to establish the relationship between currency spread determinants and financial performance of Foreign Exchange bureaus in Kenya.

1.3.1 Specific objectives

1. To determine the relationship between market volatility and financial performance of foreign exchange bureaus in Kenya.
2. To establish the relationship between interest rates and financial performance of foreign exchange bureaus in Kenya.
3. To determine the relationship between Gross Domestic Product and financial performance of foreign exchange bureaus in Kenya.
4. To establish the relationship between inflation and financial performance of foreign exchange bureaus in Kenya.

1.4 Research hypothesis

$H_{O.1}$: There is no significant relationship between market volatility and financial performance of foreign exchange bureaus in Kenya.

$H_{O.2}$: There is no significant relationship between interest rates and financial performance of foreign exchange bureaus in Kenya.

$H_{O.3}$: There is no significant relationship between Gross Domestic Product and financial performance of Foreign Exchange bureaus in Kenya.

$H_{O.4}$: There is no significant relationship between inflation and financial performance of foreign exchange bureaus in Kenya.

1.5 Scope of the Study

The study population targeted 76 foreign exchange bureaus in Kenya. The time scope was financial data for these foreign exchange bureaus since 2013 to 2017 as this represents the latest five years of operation which can give accurate picture of current happening of the sector. The geographic scope is Nairobi and institutional scope is the NSE. This is because the NSE is currently only located in Nairobi and it is the only legalised stock market in Kenya from where we can get accurate secondary data for the bureaus. It is possible to gain access to their financial statements for preceding financial years. The current study focused on the currency spread determinants of foreign exchange bureaus listed in Nairobi Securities Exchange and to establish the determinants of currency spread in foreign exchange bureaus in Kenya. Furthermore, the study confined itself to the relationship between currency spread determinants and financial performance of Foreign Exchange bureaus in Kenya.

1.6 Significance of the Study

The current study was a contributor to the research done on the foreign exchange bureaus in Kenya and provides future researchers with a literature for study. The study was of great importance to

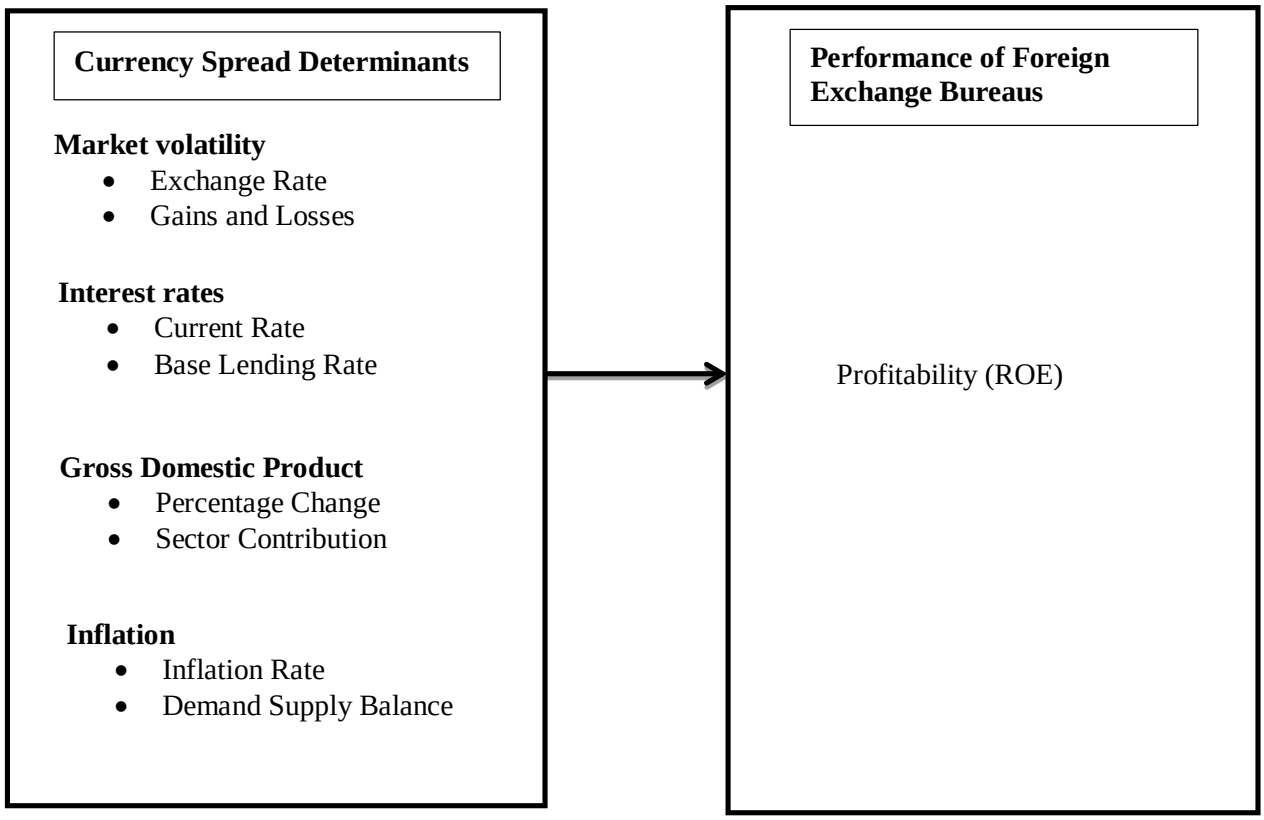
foreign exchange bureaus operating within the Kenyan environment which faces a lot of turbulence due to the various risks that they are exposed to like; political risk, business risk and financial risk. The findings would help them know what practices similar firms use to hedge against risks that pose as a threat to their survival in the ever-changing competitive environment.

The study also brought an insight to the Central Bank of Kenya, which is a key regulatory body in licensing and operation of the foreign exchange bureaus. It was in a position to appreciate the role played by the foreign exchange bureaus in the Kenya's economy and hence intervene as well as put policies in place that counteract systematic risks that the bureaus are exposed to.

1.7 Conceptual framework

Conceptual framework is a scheme of variables which the study operationalizes in order to achieve the set objectives. A conceptual model explains the study variables and the presumed relationships among them (Miles *et al*, 1994). It also represents a synthesized and integrated way of understanding of issues which enables the researcher to address the research problem (Liehr*et al*, 1999). The conceptual framework for this study was formulated after a review of literature and empirical studies revealed some knowledge gaps. Based on the identified gaps, it was necessary to develop researcher's own assumptions of the relationships among the study variables. These assumptions were used to formulate the research questions, research objectives, research hypotheses and conceptual framework**.** This is illustrated in Figure 1.1. The independent variable in this context is currency spread determinants while the dependent variable is performance of foreign exchange bureaus.

Independent Variable **Dependent Variable**



Relationship between currency spread determinants and financial performance

Figure 1.1: Source Abdul (2018)

CHAPTER TWO

LITERATURE REVIEW

To address the research study question, this chapter focused on viewing significant literature on the concepts of the study. This section was organized in the following parts. First, a review of relevant theories earlier introduced will be conducted. Secondly, a highlight of what other scholars have reviewed on the topic of study will follow. Finally, a blend of the scholars' views will be done so as to provide the existing knowledge gaps on the topic of study.

2.1 Theoretical Review

The foundation of any theory of the firm is a set of initial premises which form the basis for the logical developments of propositions concerning the structure, behaviour, performance, and the existence of the firm. Theories of the firms are conceptualizations and models of business enterprises which explain and predict their structure and behaviour. As a result, the study will be hinged on various theories; these are the Purchasing Power Parity Theory and Balance of Payment Theory.

2.1.1 The Purchasing Power Parity Theory

The Purchasing Power Parity was advanced by Menon and Viswanathan (2005). Particularly, this theory explains that the value of homogenous goods is similar in different countries based on the currency of each country. According to them, when purchasing power is similar in different countries then the exchange rates between the country's currencies will be at equilibrium. Reid and Joshua (2004) postulated that ratio of commodities price levels should equal the country's currency. According Ross (2008), a country's currency may be incorrectly valued whereby money has no purchasing power against the country's commodities level.

The Purchasing Power Parity is based on the assumptions that there are no transactional costs, no barriers to trade and the commodities being traded are homogeneous. If the trading currency is exchanged at the spot exchange rate, the price of a homogenous commodity should be identical across borders. The theory suggested use of price indexes to determine the exact price of a homogenous commodity between countries. The main challenge of this belief is in measuring Purchasing Power Parity constructed from price indexes given that different countries use different goods to determine their price level (Reid, 2005).

Menon and Viswanathan (2005) showed two classification of the purchasing power parity; relative and absolute. According to them, absolute purchasing power parity implies that regardless of the currency similar commodities should cost the same thus emergence of the Law of One Price. Due to limitations in the absolute purchasing power parity, another form of purchasing power parity has evolved the relative purchasing power parity. Relative purchasing power parity recognizes imperfections of the markets; it indicates what exchange rate changes rather than absolute exchange rates over time (Ross, 2008).This theory is relevant for this study as it explains a country's currency value over another country's currency. This theory argues that in the equilibrium exchange rate is one that ensures that the value exchanged can purchase the same basket of goods and services from either of the countries involved.

This theory has been criticized on various grounds because actual exchange rates are often different from calculated purchasing power parities and these deviations are often put forth as a ground for the rejection of the purchasing power parity theory. The theory proposes a direct functional relation between the purchasing powers of the currencies of two countries and their exchange rate. However, in reality there is no such direct and precise link between the two. There are many factors apart from the purchasing power of currencies, such as tariff, speculation, capital flows, etc., which significantly affect the rate of exchange. According to the theory, to calculate the new equilibrium

rate one must know the base rate i.e., the old equilibrium rate. But it is difficult to ascertain the particular rate which actually prevailed between the currencies as the equilibrium rate. Moreover, the calculated new rate would represent the equilibrium rate at purchasing power parity only if economic conditions have remained unchanged. The theory assumes that, we are regaling with a similar group of commodities in both countries. This assumption is not tenable, when the very base of international trade is geographical specialization in production. Moreover, the concept of a change in the price is vague in theory. Prices of all commodities never move uniformly. Prices of some commodities rise or fall much more than those of others. Under such conditions, no simple comparison can be made between the price movements in different countries.

This theory is deemed relevant to the study because it explains that the value of homogenous goods is similar in different countries based on the currency of each country. This implies that when purchasing power is similar in different countries then the exchange rates between the country's currencies will be at equilibrium. The ratio of commodities price levels should equal the country's currency. A country's currency may be incorrectly valued whereby money has no purchasing power against the country's commodities level. The theory explains how forex exchange determines variation in prices of goods.

2.1.2 Balance of Payment Theory

The balance of payments theory of exchange rate holds that the price of foreign money in terms of domestic money is determined by the free forces of demand and supply on the foreign exchange market. It follows that the external value of a country's currency will depend upon the demand for and supply of the currency. The theory states that the forces of demand and supply are determined by various items in the balance of payments of a country. According to this theory, a deficit in the balance of payments leads to fall or depreciation in the rate of exchange, while a surplus in the balance of payments strengthens the foreign exchange reserves, causing an appreciation in the

price of home currency in terms of foreign currency. A deficit balance of payments of a country implies that demand for foreign exchange is exceeding its supply as a result, the price of foreign money in terms of domestic currency must rise, i.e., the exchange rate of domestic currency must fall. On the other hand, a surplus in the balance of payments of the country implies a greater demand for home currency in a foreign country than the available supply.

The theory of balance of payments asserts that, the rate of exchange is the function of the supply of and demand for foreign money and not exclusively the function of prices obtaining between two countries as asserted by the Purchasing Power Parity Theory which does not take into account invisible items. According to the balance of payments theory, the demand for foreign exchange arises from the "debit" items in the balance of payments, whereas, the supply of foreign exchange arises from the "credit" items. Since the theory assumes that the demand for and supply of foreign currency are determined by the position of the balance of payments, it implies that supply and demand are determined mainly by factors that are independent of variations in the rate of exchange or the monetary policy (Reid, 2005).

According to the theory, given demand-supply schedules, their intersection determines the equilibrium exchange rate of a currency. It should be noted that the lower the price of a currency, the greater will be the demand for it, and therefore, the demand curve slopes downward. On the other hand, the supply curve slopes upward from left to right indicating that a lowering of the value of price of the currency tends to contract its supply. This theory is is useful to the current study since it brings the determination of exchange rate problem within the purview of the general equilibrium analysis (Kanmori & Zhao, 2006).

The fundamental defect of the theory is that it assumes perfect competition, including no interference with the movement of money from one country to another. This is very unrealistic. According to the theory, there is no causal connection between the rate of exchange and the internal

price level. But, in fact, there should be some such connection, as the balance of payments position may be influenced by the price-cost structure of the country. The theory advocates that the rate of exchange is the function of the balance of payments. But, in practice it has also been found that the balance of payments position of a country is very much affected by the changes in the rate of exchange. Thus, it is equally true that the balance of payments is the function for the rate of exchange. In this sense, the theory is indeterminate as it confuses as to what determines what. According to the theory, the optimum value of a currency is the gold content embodied in it. This is not true for a flat paper standard. Thus, the demand-supply theory fails to explain the basic value incorporated in currencies. In fact, the balance of payments theory of exchange rate is merely a truism - a self-evident fact without any causal explanatory significance. Critics argue that if payments must necessarily balance, there can be no meaning to a decline in the exchange rate during an unfavorable trade balance; an uncovered balance simply does not exist.

This theory is relevant to the study because it holds that the price of foreign money in terms of domestic money is determined by the free forces of demand and supply on the foreign exchange market. It follows that the external value of a country's currency will depend upon the demand for and supply of the currency. It also states that the forces of demand and supply are determined by various items in the balance of payments of a country. The theory also explains why a deficit in the balance of payments leads to fall while a surplus in the balance of payments strengthens the foreign exchange reserves, causing an appreciation in the price of home currency in terms of foreign currency. The theory explains how forex determines the demand of currency in foreign exchange.

2.2 Concept of Currency Spread Determinants and Financial Performance

2.2.1 Concept of Currency Spread Determinants

On the Forex market, just like on any financial market, transaction costs are charged whenever you open a new position. In Forex, this transaction cost is called the “spread” and represents the difference between the Bid and Ask prices of a currency pair. However, to understand how Forex brokers derive their spreads and what Bid and Ask prices are, you first need to understand how currency pairs are quoted in Forex. On the Forex market, currencies are always traded in pairs. A currency pair consists of the base currency (the left-hand side of the pair) and the counter, or quote currency (the right-hand side of the pair). The quote of a currency pair tells us how many units of the counter currency it is possible to buy with one unit of the base currency (Murthy, 2003).

Forex spreads are variable and depend on various factors; including market liquidity, market conditions, upcoming economic data and investor sentiment. During times of important market reports, such as reports on economic growth, inflationary reports or interest rate changes, the spread usually widens. Simply said, whenever there is an imbalance of buyers and sellers for a specific currency pair, the spread will widen to reflect this market condition. On volatile market bid-offer spreads are wider than during quiet market conditions. Status of a customer also impact spread as large scale traders or premium clients enjoy personal discounts. Nowadays Forex market characterizes high competition and as brokers are trying to stay closer to customers, spreads tends to be fixed on lowest possible level. Each trader should pay sufficient attention to spread management. Maximum performance can only be achieved when maximum quantity of market conditions is taken into account. Successful trading strategy is based on effective evaluation of market indicators and specific financial conditions of a deal. The best tools here are complex analysis, forecasting, risk/return analysis, transaction cost evaluation. Because spreads are subject

to change, spread management strategy should also be flexible enough to adjust to market movement (Cooper, 2003).

2.2.2 Concept of Financial Performance

Financial performance is a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. For Forex Bureaus, profitability is the main measures used to establish the extent to which the Forex Bureaus generates a profit from the capital in its possession (Mutua, 2013). Profitability is measured by determining the net firms' income from operations (NFIFO), rate of return on firms' assets (ROA), rate of return on firms' equity (ROE) and operating profit margin (OPM) (Miller, 2003). Net revenues available from normal operations after fixed and variable expenses are deducted, are calculated on an accrual basis. Operating profit margins are used to reflect the ability of the banks' to generate revenues and control costs. Return on Assets measures are used to ascertain the profitability of the firm in relation to total assets employed. Net firm income from operations is the net income generated by all assets, after labor has been compensated but before interest payments. Foong (2008) indicated that the efficiency of banks can be measured using Return On Equity which illustrates to what extent banks use reinvested income to generate profits.

2.3 Empirical Studies

Various studies related to this topic have been done both locally and internationally. These studies are based on actual and objective observation or experimentation. Griffin and Stulz, (2011) found out that the effect of currency spread shocks is minimal in explaining relative US financial sector industry and is even smaller in other countries that are more open to trade. Instead, industry effects

were more significant affecting trade than the cross currency exchange rates. Bradley and Mole, (2012) notes that currency spread risk management is a financial function and thus affects the firm`s financial position. Volatile exchange rates do reduce cash flows and profitability of any the forex exchange bureau. Belk, (2012) states the aim of currency spread risk management as limiting currency spread exposure on the bureaus financial performance whereas Shapiro, (2016) describes performance in terms of higher profit margin, sales growth and overall liquidity of firm. This relates how currency risk assessment stimulates financial objectives. Exchange rates have notable effect financial decision making on profitability of the firm. For instances, in their efforts to minimize exchange rate risk exposures, the European union developed a uniform currency, the euro, to enable European firms to trade freely from the uncertainties of changes in relative prices resulting from exchange rate movements. It also resulted in an increase in bilateral trade.

Locally, Omagwa, (2015) studied how foreign owned commercial banks in Kenya managed their currency spread risk exposure. He found out that transactional risk exposure was prominent among other risks and found out that practices employed to manage these risks include leading and lagging, use of currency swaps and forward covers. In his study, a survey of foreign exchange risk management practices forex bureaus in Kenya, Ubindi, (2016) found out that quite a number of forex bureaus employed the conventional foreign exchange risk management practices while other forex bureaus had their own specific practices based on their views of what constitutes foreign exchange risk. He further noted that the hedging practices employed were influenced by the forex bureaus views on currency market fundamentals. The practices include forecasting, speculating and taking individual positions in the currency markets with an aim of making financial gains and use of specific financial instruments to hedge against foreign exchange. Njuge, (2012) also surveyed foreign exchange risk management practices adopted by microfinance institutions in Kenya concluding that netting, price negotiations and delaying of payments are the main management strategies. Other prior research on forex bureaus in Kenya has focused mainly on

currency risk management strategies and the principles of the best corporate governance practices. The aim of this research is to assess the effects of foreign exchange management practices to financial performance of Forex bureaus. Several components of corporate foreign exchange management strategies are studied with reference to the financial performance of the firms.

2.4 Currency Spread Determinants

Empirical evidence suggests that several factors influence the size of the bid-offer spread. The most important are volatility and currency liquidity. Popular currency pairs are traded with lowest spreads while rare pairs raise dozen pips spread. Next factor is amount of a deal. Middle size spot deals are executed on quotations with standard tight spreads; extreme deals both too small and too big are quoted while broader spreads due to risks involved.

2.4.1 Market Volatility and Financial Performance

Joshua (2004) a volatile market bid-offer spreads are wider than during quiet market conditions. Particularly, status of a customer also impacts spread as large scale traders or premium clients enjoy personal discounts. Nowadays Foreign exchange market characterizes high completion and as brokers are trying to stay closer to customers, spread tends to be fixed on lowest possible level. Currency volatility, also known as foreign exchange or FX volatility, is the unpredictable movement of exchange rates in the global foreign exchange market. This volatility can lead to large losses (or gains) in the foreign exchange market. It is the principal cause of foreign currency risk.

Foreign exchange volatility is one of the greatest credit risks to the corporate sector, and one that must be managed effectively in order to protect a company's bottom line. Volatility is produced in a currency due to a range of possible factors including inflation levels, interest rates, tourism, geopolitical stability, import and export levels, and monetary policy, among other factors. Real

instances of currency volatility: In January 2015 the Swiss franc shock, which saw the Swiss National Bank abandon the peg that kept the franc locked to the euro at a fixed rate, sent currency markets across the world into a volatility spin. The euro dropped in value by over 30% against the franc (Koltrowitz, 2015). In 2014 the Russian rouble fell by around 50% in value against the U.S. dollar as the price of oil nosedived – Russia is a commodity-driven economy reliant on gas and oil exports – and economic sanctions on the country bit hard (Rankin, 2014). The reduction in market volatility/foreign exchange volatility means that the foreign exchange traders have fewer ways of making profits. As such each trader should pay sufficient attention to spread management. Maximum performance can only be achieved when maximum quantity of market conditions is taken into account.

Successful trading strategy is based on effective evaluation of market indicators and specific financial conditions of a deal. The best tool here are complex analysis, forecasting, risk/return analysis, transaction cost evaluation. Because spread is subject to change, spread management strategy should also be flexible enough to adjust to market movement. Similar to any other market price, the price of an exchange rate is determined by the forces of demand and supply. The price of an exchange rate reflects many economic and non-economic factors. The most important factors are inflation, interest rates, growth and macroeconomic risk. Here are all the major factors affecting the fluctuations of global currencies. During times of high risk and uncertainty, currency spread tends to widen. If, for example, the outcome of elections and therefore the future economic policies in the United Kingdom formed a big question mark, the spread in dollar vs. British pound sterling trading would be likely to go up (Bahmani-Oskoee, 2007). This is because traders dislike risky situations and scale back trading activity until the dust settles. With fewer active traders in the market, the spread will widen. While broader spreads mean higher trading costs, uncertain times also offer significant profit opportunities for forex investors who can successfully forecast future events.

2.4.2 Interest Rates and Financial Performance

The interest rate parity is a concept similar as purchasing power parity, it weighs the contrast in interest rates between two similar interest-bearing assets (interest rates differential). This is what foreign exchange traders use to price forward exchange rates (Karnaukh, Ranaldo, & Soderlind 2015). Interest rate parity is central to foreign exchange markets because it connects interest rates with spot exchange rates and foreign exchange. If one country offers a higher risk-free rate of return in one currency than that of another, the country that offers the higher risk-free rate of return will be exchanged at a more expensive future price than the current spot price. In other words, the interest rate parity presents an idea that there is no arbitrage in the foreign exchange markets. Investors cannot lock in the current exchange rate in one currency for a lower price and then purchase another currency from a country offering a higher interest rate (Treepongkaruna, Brailsford & Gray, 2013). What this means is that, the purchase of an asset in one country should yield the same return in another country (the law of one price) otherwise the exchange would have to adjust. With these adjustments, the forex bureaus either make losses or profits which simply translate to their financial performance.

Interest rates, inflation and exchange rates are highly dependent. When central banks manipulate the interest rates, they put pressure on inflation as well as exchange rates. Adjusting interest rates influences inflation and the value of currencies. When the interest rates are increased, lenders get more incentive to put more money up for borrowing, consequently more capital is attracted from foreign countries raising the exchange rate. The impact of interest rates however is lessened if the level of inflation in the country is higher than in others or the effect of other additional factors that drive the currency down. When the interest rates are low, the reverse effect is experienced, as in lower interest rates decrease exchange rates.

The recent interest rate capping by the central bank of Kenya has influenced significantly the level of profitability of forex bureaus. Having established the relevance of interest rates on exchange rates, the decrease in interest rates for banks means little interest incomes because of the reduction of net interest margin or the margin chargeable on borrowing. This means now that, banks and other financial institutions that attract more capital from outside decrease the amount of loans approved and little capital is attracted from overseas or outside borders. Interest rate capping therefore has an undesirable effect on the performance of forex bureaus.

Reid (2005) opines that the interest rates of an economy are determined exclusively by the Central Bank. Particularly, when the interest rates of a Foreign exchange currency are increasing, that means that more investment funds are attracted and buy that currency in order to achieve higher interest return. On the other hand, when interest rates are decreasing a Foreign exchange currency is less attractive to investment funds and thus it is expected to fall against other currencies. Market factors may affect also the value of a Foreign exchange Rate. For example when the price of oil goes up, oil-exporting currencies are moving higher against oil-importing currencies. Countries like Norway, Russia and Canada are affected highly by the market prices of energy commodities and thus their currencies are reflecting and incorporating those price changes very quickly.

2.4.3 Economic Growth (GDP) and Financial Performance

The gross domestic product or GDP fundamental economic indicator is one of the most closely monitored indicators by foreign traders. It indicates the economic health of a country, For example, a final reading of 1.5% growth compared to an earlier advanced release of 3.5% is worse off when compared to a similar 1.5% print in both advanced and final readings. A positive growth figure is always good for the economy, but not when a final GDP figure dips below the advanced reading. Furthermore, both the influential data's initial release and its subsequent revisions can often result in wild swings in the forex market (Franco Fiordelisi, 2014).

Like any other piece of important economic data, the gross domestic product report holds a lot of weight for currency traders. It serves as evidence of growth in a productive economy, while signalling contraction in a withering one (Fiordelisi, Galloppo & Ricci, 2014). As a result, currency traders will tend to seek higher rates of GDP or growth in a belief that interest rates will follow the same direction. If an economy is experiencing a good rate of growth, the benefits will trickle down to the consumer – increasing the likelihood of spending and expansion. In turn, higher spending leads to rising prices, which central banks attempt to tame through interest rate hikes. For this reason, the GDP has a top tier reputation as one of the most closely watched of all of the key fundamental indicators. Both its initial release and its revisions can result in significant financial market activity and exchange rate fluctuations.

There are three basic reactions to price action that a trader or investor can expect with the changes in GDP figures: A lower-than-expected GDP reading will likely result in a selloff of the domestic currency relative to other currencies. In any country, a lower GDP figure would signal an economic contraction and hurt the chances of a rise in local interest rates – lowering the value or attractiveness of currency based assets. Additionally, the further below an actual GDP reading is from the estimate, the sharper the decline in the currency against foreign ones. An expected reading requires a bit more comparison by the Foreign exchange investor. Here, the analyst or trader will want to compare the current reading to the previous quarter's reading – maybe even the previous year's reading. This way, a better evaluation of the situation can be gathered. Given this factor, you can expect that the resulting price action will tend to be mixed as the market sorts out the details. A higher-than-expected reading will tend to strengthen the underlying currency versus other currencies (Saymeh & Orabi, 2013). Therefore, a higher GDP figure will benefit the currency in question, leading to some appreciation in the local currency against counter currencies; the higher an actual GDP reading is, the sharper the incline of the currency's appreciation.

Basically, when the Gross Domestic Product data for a country comes out higher than the market is expecting, then that is usually positive news for the currency of that nation. Lifted by such good news, that currency will often subsequently appreciate relative to other currencies (Kevork I.S., 2017). Conversely, when the GDP data for a country comes out lower than the market is expecting, then that is usually negative news for the currency of that nation, which will often subsequently depreciate relative to other currencies.

2.4.4 The Rate of Inflation and Financial Performance

Inflation is closely related to interest rates, which can influence exchange rates. Countries attempt to balance interest rates and inflation, but the interrelationship between the two is complex and often difficult to manage. Low interest rates spur consumer spending and economic growth, and generally positive influences on currency value. If consumer spending increases to the point where demand exceeds supply, inflation may ensue, which is not necessarily a bad outcome. But low interest rates do not commonly attract foreign investment. Higher interest rates tend to attract foreign investment, which is likely to increase the demand for a country's currency. The ultimate determination of the value and exchange rate of a nation's currency is the perceived desirability of holding that nation's currency (Saymeh& Orabi, 2013). That perception is influenced by a host of economic factors, such as the stability of a nation's government and economy. Investors' first consideration in regard to currency, before whatever profits they may realize, is the safety of holding cash assets in the currency. If a country is perceived as politically or economically unstable or if there is any significant possibility of a sudden devaluation or other change in the value of the country's currency, investors tend to shy away from the currency and are reluctant to hold it for significant periods or in large amounts increasing the currency spread.

The inflation rate of an economy has a very strong impact on the value of Foreign exchange currency. When the level of prices increases in an economy, each unit of a currency can buy fewer

goods and services, and thus the purchasing power of money is decreasing and consequently the real value of the domestic currency is decreasing too. On the other hand, lower inflation increases the purchasing power of money and the real value of a domestic currency is increasing against foreign currencies.

Exchange rates are relative, especially in the modern world of fiat currencies where virtually no currencies have any intrinsic value, say, as defined in terms of gold, for which the currency could be exchanged. The only value any country's currency has is its perceived value relative to the currency of other countries or its domestic purchasing power. This situation can influence the effect that an input such as inflation has on a country's exchange rate. For example, a country may have an inflation rate that is generally considered high by economists, but if it is still lower than that of another country, the relative value of its currency can be higher than that of the other country's currency (Catao & Terrones, 2005). Currency speculation can affect highly the real value of a Foreign exchange currency. Large institutional speculators (i.e. hedge funds) have the power to bet against a particular currency aiming profits. For example in 1992 George Soros made over 1 billion USD by short selling British Sterling.

2.5 Knowledge Gap

Most studies on currency spread determinants have focused on arbitrage opportunities and not many have tackled the determinants of currency spread and how they affect the financial performance of forex bureaus. Contextually, on the relationship between currency spread determinants and financial performance of foreign exchange bureaus in Kenya are limited. Foreign exchange bureaus face a threat of exchange rate fluctuations due to the fact that pressures on the demand and supply sides of foreign exchange markets determine the level of interest and exchange rates in these markets. Thus, it suffices to conclude that no study has looked at the relationship

between currency spread determinants and financial performance of bureaus Exchange in Kenya. This is the gap the present study seeks to bridge.

There is a gap on significance of market volatility in influencing the currency spread in the foreign exchange market over other factors. A gap also exists on how interest rates affect in an interest capping regime where interest rates are predetermined by the central bank. Additionally, there is a gap on of GDP which will significantly impact on the value of the local currency because products are produced for local markets and the direct correlation between unanticipated inflation and currency spread (whether an increase in unanticipated inflation increases the currency spread).

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter reviews the overall methodology used to carry out this research. It explains the research design adopted, study population, sampling design, data collection methods, research instruments used in the study, data processing, presentation and analysis and to determine if there exist a relationship between currency spread determinants and the financial performance of foreign exchange bureaus listed in the Nairobi Securities Exchange.

3.1 Research Design

A correlation research design was utilized in this study. Mugenda and Mugenda (2003) describes descriptive research design as a systematic, empirical inquiring into which the researcher does not have a direct control of independent variable as their manifestation has already occurred or because the inherently cannot be manipulated. This study design is one that is concerned with specific predictions, with narration of facts and describes the characteristics of a particular individual, group or situation. The study design was therefore to examine and explore descriptive characteristics of several variables of interest.

The dependent variable of performance was measured using financial measures of profitability (Gopinathan 2009). Profitability is a good indicator of performance in business firms. The independent variable of inflation rates, interest rates, volatility and market demand was measured in financial terms (Evans, Taylor & Holzmann 1985). This is very important in examining the objective we sought to achieve, how selected foreign exchange bureaus managed foreign exchange risk, and second research question that involved examination of the degree of financial performance also needed a descriptive research design.

3.2 Study Area

The study was carried out in the Nairobi Securities Exchange located in Nairobi County. Nairobi is County's capital and the largest city and the capital in Kenya. The city has a population of 3,138,369 while Nairobi metropolitan has a population of 6, 547,547. The Nairobi Securities Exchange (NSE) it is the only place where it is situated.

3.3 Target Population

Kothari (2004) defines population in statistics as the specific population about which information is desired. According to Easton and McColl (2012), population is a combination of people, services, elements, animals, plants or things from which data can be collected. It indicates the analysis of entire units or total elements collection on which the study was conducted (Cooper & 24 Schindler,2008). Therefore, Population is a group of individuals, events or objects having common characteristics about which the researcher wishes to make generalizations since the target population is similar. The target population under study was the 76 foreign exchange bureaus listed in the Nairobi Securities Exchange.

3.4 Sampling Procedure

The sampling technique is standard choices technique from the population so one can stand on behalf of that populace (Collins & Hussey, 2006). The object, nature and scope of the study are factors that determine a particular method if it's miles a sample random kind or diverse kinds (Hyers, 2006). This research or study was a census all the 76 forex exchange bureaus to participate in the study. The census is preferred because of the small target population it gave better representation of the issues under study (Cooper & Schindler, 2007).

3.5 Data Collection

The study employed Secondary data collection techniques. The Secondary data was obtained from the financial statements of the foreign exchange bureaus, the Statistical Bulletins and the Monthly Economic Reviews of the Central Bank of Kenya (CBK), the Economic Surveys of the Kenya National Bureau of Statistics (KNBS), and the Budget Outturns of the Ministry of Finance. The main data collection instrument that was used in the study is data sheet. A datasheet is a document that summarizes the performance and other technical characteristics of a product, machine, component, material or a subsystem in sufficient detail to be used to integrate the component into a system. The study used secondary data.

3.5.1 Datasheet

A datasheet is a tool of data presentation that summarizes the performance and other technical characteristics of a product, machine, component and many others. It was used to collect information on relationship between currency spread determinants and financial performance of foreign exchange bureaus in Kenya.

3.6 Data collection procedure

Data collection involves selecting subjects and gathering information from them. The process delineates the steps involved in data collection with regard to a specific study and depending on the research design and method of measurement (Burns and Grove, 2013). A permit was obtained from the university to conduct the study. Then permits were sought from the National Council for Science, Technology and innovation (NACOSTI) and the management. Once the permits are granted appointments was booked with various foreign exchange bureaus listed in the Nairobi Securities Exchange to determine the most suitable day and time to carry out the study. On that

day the researchers went there and request those who are responsible in filling datasheet to help them fill the datasheet.

3.7 Data Analysis

The data obtained was analyzed using SPSS software version 22.0. Data collected was both qualitative and quantitative. Quantitative data collected were presented using frequency and tables. Qualitative data was analyzed using regression analysis. Qualitative data was therefore presented in a regression model which shows relationship between the independent variables and organization performance of the Forex Bureaus in Kenya.

3.7.1 Data Analytical Model

This study adopts model mooted by Ritsema et al (2003) which is a form of multiple linear regression. In order to determine relationship between currency spread determinants and financial performance of bureaus the following regression model was used. The regression model is a multivariate version declaring the forex bureaus ROE as a function of the selected determinants of currency spread determinants. The linear regression model for the study is; (Ksh is the unit of analysis).

$$\mathbf{Y= \beta_0+\beta_1X_{1it}+\beta_2X_{2it}+\beta_3X_{3it}+\beta_4X_{4it}+\ldots\ldots \varepsilon o}$$

Where:

Y = ROE of the foreign exchange bureaus in Kenya which is a profitability measure is the value of the dependent variable.

X_1 = is the market volatility.

X_2 = the interest rate defined as the average annual exchange rate.

X_3 = is the economic growth (GDP).

X_4 = is the inflation rate.

β_0 - is the constant or intercept describing functional relationships

β - is the Beta factor

εo - is the error term

3.7.2 Diagnostic Tests

The following are the assumptions that the data must meet in order to conduct a linear regression analysis.

Normality: It is assumed that the residuals of variables are normally distributed. That is, the errors in the prediction of value Y (the dependent variable) are distributed in a way that approaches the normal curve. The assumption of normality is especially critical when constructing reference intervals for variables and when this assumption does not hold, it is impossible to draw accurate and reliable conclusions about reality (Ghasemi& Zahediasl, 2012). The study therefore, used the Shapiro-Wilk test for testing the normality of data in line with the recommendation of Thode (2002). The Shapiro-Wilk test is based on the correlation between the data and the corresponding normal scores and provides better power than the K-S test even after the Lilliefors correction (Steinskog, 2007; Mendes & Pala, 2003).

Linearity: When the variables X and Y are linearly correlated, it is meaningless to fit a linear regression model between them. Therefore, *t*-Test is being used to examine whether there is some significant linear relationship between the independent and dependent variables or not (Kothari & Garg, 2014). The decisions about the null hypothesis in a two-tailed test were taken by comparing the computed value and critical value of *t* distribution. The null hypothesis is rejected at α x 100% level of significance when the computed value and critical value T_r is lower than $-t_{\alpha/2}$ or larger than $t_{\alpha/2}$. Rejecting a null hypothesis means there is a significant linear relationship between the

variables (Kothari & Garg, 2014). It is assumed that the relationship between the independent and dependent variables is linear. Scatter plots of the variables can help make this determination.

Homoscedasticity: In this study heteroscedasticity shall be minimized or eliminated where possible by ensuring that the data used in hypothesis testing is approximately normal and is accurately transformed and that the right functional forms of regression model are selected and variables presented by scatter plot diagrams of the dependent variable (DV) will widen or narrowed as the value of the independent variable (IV) increases. The inverse of heteroscedasticity is homoscedasticity, which indicates that a DV's variability is equal across values of an IV. At each level of the predictor variables(s), the variance of the residual terms should be constant. This was tested using qq plots

Multicollinearity: Multicollinearity exists when two or more of the predictors in a regression model are moderately or highly correlated. Unfortunately, when it exists, it can wreak havoc on analysis and thereby limit research conclusions in this study it were detected when the *t*-tests for each of individual slopes are non-significant ($P > 0.05$), but the overall *F*-test for testing all of the slopes are simultaneously 0 is significant ($P < 0.05$); hence relying on variance inflation factor (*VIF*) quantifies how much the variance is inflated; the variances of the estimated coefficients are inflated when multicollinearity exists.

Heteroscedasticity: is the circumstance in which the variability of a variable is unequal across the range of values of a second variable that predicts it. There should be no perfect linear relationship between two or more of the predictors. So, the predictor variables should not correlate too highly this was tested using variance inflation factor (VIF) and tolerance The assumption of independence Statistical tests that were used in the research study include the *t*-Test, ANOVA (*F*-Test), Shapiro-Wilk test (test for normality) and Durbin-Watson test.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter captures the presentation and discussion of findings. The data was analysed and presented using descriptive and inferential statistics and discussion of the findings aligned to the study objectives. Inferential statistics included linear regression models and correlation analysis to determine the strength of relationships between the dependent and independent variables presented in tables. Descriptive statistics were also captured in tables including the mean, standard deviation, minimum, and maximum values of the variables.

4.1 Financial Characteristics of the Forex Bureaus Information

The study sought to determine financial characteristics of the Forex bureaus. This referred to the information about the profitability of the Forex bureaus. It also referred to the market conditions that the Forex bureaus had to operate under including the market volatility, the interest rates, the GDP and the inflation over a period of five years from 2013-2017. This information was necessary as it formed the basis of the performance of the Forex bureaus. The study findings are presented in table 4.1.

Table 4.1: Financial Characteristics of the Forex Bureaus Information

Financial Characteristics of the Forex Bureaus Information					
Year	**Market volatility**	**Interest Rates**	**GDP % growth rate**	**Inflation**	**Profitability % decline**
2013	7	20.43	6.79	7	23
2014	5.89	18.98	6.66	6.89	21.13
2015	6.22	23.76	6.59	5.13	18.1
2016	4.57	24.57	6.11	6.69	15.89
2017	3.19	14.71	5.19	5.34	10.25

Source: Secondary data collected

The study findings indicated that there have been decreases on profitability % change of foreign exchange bureau from 23.00% in 2013 to 10.25% in 2017. The study finding also indicated that the determinants of currency spread of forex bureau have also been changing; inflation changed from 7.00% in 2013, 6.89% in 2014, 5.13% in 2015, and 6.69 % in 2016 and to 5.43% in 2017. GDP growth of the country has fluctuated as follows since 2013. By 6.79% in 2013, 6.66% in 2014, 6.59% in 2015, 6.11% in 2016 and to 5.19% in 2017.

Interest rate charged by different banks in the country was averaged from the 5 top commercial banks in the country including KCB, National Bank, Standard Charteed bank, Equity Bank and Cooperative Bank. The average of the interest rates charged was the computed and found to be as follows; The average interest rate charged was 20.43% in 2013, 18.98% in 2014, 23.76% in 2015 and 24.57% and 14.71% in 2017. Market volatility index computed by the NSE stock market shares movement in the financial industry was 7.00% in 2013, 5.89% in 2014, 6.22% in 2015, 4.57% in 2016 and 3.1% in 2017.

4.2 Descriptive Statistics of the Variables

A descriptive analysis of the data collected on the variables was assessed by the researcher to understand the distribution of the data collected. These included the mean, standard deviation, minimum, and maximum values of the variable. The findings are presented in table 4.2.

Table 4.2: Descriptive Statistics of Forex Bureaus Data

Descriptive statistics of the Forex Bureaus Data				
	Mean	**Std. Deviation**	**Minimum**	**Maximum**
Market volatility	6.3	0.1	2.2	10.3
Interest rates	20.1	0.2	13.8	25.5
GDP % growth rate	6.2	0.03	5.2	6.8
Inflation	6.2	0.04	4.2	7.9

Profitability of EB	17.7	0.2	9.35	23.9

Source: Secondary data collected by researcher

The findings presented in table 4.2 show that the mean volatility in the market was 6.3 with a standard deviation of 0.1. The mean interest rate was 20.1% with a standard deviation of 0.2, a minimum of 13.8% and a maximum of 25.5%. The GDP growth rate was averagely at 6.2% with a standard deviation of 0.03, the maximum growth rate being 6.8%. Inflation rates averaged 6.2% with a standard deviation of 0.04%, the minimum being at 5.1% and maximum 7.0%. Profitability of exchange bureaus averaged 17.7% with a standard deviation of 0.2, the maximum growth rate being 23.9%.

4.3 Inferential Statistical Analysis of the Forex Bureaus Data

In order to understand the relationship between the dependent and independent variables identified by this study, the researcher conducted inferential statistical analysis involving multiple linear regression analysis. This was also essential in determining the significance of the coefficients of the explanatory variables. An analysis of variance generated from the analysis was also used in determining the fitness of the regression model. This was then followed by a correlation analysis used in establishing the direction of relationship that existed between the dependent and independent variables.

4.3.1 Correlation Coefficient Analysis

The researcher used the Pearson product-moment correlation coefficient which measures the strength of linear association between two variables. This is usually denoted by r and takes any value in the range +1 to -1. Correlation coefficients (r) values greater than 0 imply positive associations, less than 0 imply a negative association, while 0 imply that no association exists

between the two variables. The findings from the correlation analysis between the variables are presented in table 4.3.1

Table 4.3:1 Correlation Coefficient analysis

	Market volatility	Interest Rates	GDP % growth rate	Inflation	Profitability of EB
Market volatility	1				
Interest Rates	0.012	1			
GDP % growth rate	0.021	0.009	1		
Inflation	0.045	-0.005	-0.016	1	
Profitability of EB	0.001	0.125	0.006	0.628	1

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

Source: SPSS analysis output on secondary data collected

Study findings presented in table 4.3 show that interest rates and market volatility had a weak positive relationship (r = 0.012), GDP growth rate had a weak positive relationship with market volatility (r = 0.021) and a weak positive association with interest rates (r = 0.009). Inflation rates on the other hand had a weak positive relationship with market volatility (r=0.045), a weak negative relationship with interest rates (r = -0.005) and a weak negative relationship with GDP growth rate (r = -0.016). Profitability of exchange bureaus on the other had a weak positive relationship with market volatility (r = 0.001), a weak positive association with interest rates (r = 0.125), and a strong positive relationship with inflation rate (r = 0.628). There was however a weak positive relationship between GDP growth and profitability of exchange bureaus (r = 0.006).

4.3.2 Regression Analysis

The study developed an estimated regression analysis from the model developed in chapter three of the study. An analysis of the model is presented as follows:

4.3.2.1 Model Summary

The study carried out determination coefficient (R^2) analysis to determine the proportion of variation in the dependent variable attributable to variations in the independent variables. This was presented in table 4.3.2.1.

Table 4.3:2:1 Summary of the model

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.670[a]	0.448	0.443	3.313

a. Predictors: (Constant), Market volatility, Interest Rates, GDP % growth rate, Inflation

Source: SPSS analysis output on secondary data collected

The R^2 for the model was 0.448, implying that which 44.8% of changes in profitability of exchange bureaus was attributed to changes in market volatility, interest rates, GDP growth rate, and inflation and 44.3% when adjusted for degree of freedom (adjusted R square =0.443).

4.3.2.2 Analysis of Variance

ANOVA statistics were also relied on by the study to determine the overall significance of the regression model. This is presented in table 4.5.

Table 4.3.2.2 ANOVA output for the model

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3434.073	4	858.518	78.190	0.000[b]
	Residual	4216.298	384	10.980		
	Total	7650.371	388			

a. Dependent Variable: Profitability of EB

b. Predictors: (Constant), Market volatility, Interest Rates, GDP % growth rate, Inflation

Source: SPSS analysis output on secondary data collected

Given that the level of significance (0.000) is less than 0.05, the researcher concluded that the regression model was fit for estimation of profitability of exchange bureaus given market volatility, interest rates, GDP growth rate and inflation.

4.3.2.3 Model Coefficients

Table 4.3.2.3 shows the regression coefficients of the independent variables that affect the profitability of exchange bureaus.

Table 4.3.2.3: Regression coefficients of the model

Coefficients [a]

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	Constant	-8.103	2.386		3.396	0.001
	Market volatility	0.140	0.100	0.091	1.405	0.161
	Interest Rates	0.150	0.050	0.097	3.014	0.003
	GDP % growth rate	-0.029	0.276	-0.004	0.106	0.916
	Inflation	3.555	0.214	2.380	16.624	0.000

a. Dependent Variable: Profitability of EB

Source: SPSS analysis output on secondary data collected

The model was specified as:

$$\mathbf{Y= \beta_0+\beta_1 X_{1it}+\beta_2 X_{2it} +\beta_3 X_{3it}+\beta_4 X_{4it} + \varepsilon o}$$

The estimated model based on the analysis presented in table 4.6 therefore becomes:

$$\mathbf{Profitability\ of\ EB = -8.103+ 0.140\ X_1 + 0.150\ X_2 – 0.029\ X_3 + 3.555\ X_4}$$

Where:

Y = Profitability of exchange bureaus (ROE of the foreign exchange bureaus in Kenya)

Xi = Independent variables (1-volatility, 2-interest rate, 3- GDP growth rate, and 4-inflation rate)

β_0 - a constant

βi - Coefficients of the independent variables

εo - the error term

4.4 Interpretation of findings based on the study objectives

4.4.1 Effect of volatility on profitability of foreign exchange bureaus

The findings presented in table 4.6 showed that a unit increase in market volatility lead to 0.140 unit increase in profitability of exchange bureaus. However, at the significance level of 5%, market volatility was statistically insignificant in the model since ($t = 1.405$, p-value = 0.161 was greater than $\alpha = 0.05$).

4.5 Discussion of findings

4.5.1 Effect of market volatility on performance of forex bureau

Ngugi, (2013) noted that the effect of the volatility of forex bureau might result from the fact that most quoted companies in developing countries are import dependent and this means a negative implication for the economy in general and the stock market in particular. Agu (2014) concluded that optimal exchange rate policies must be aimed at cooling real exchange rate (RER) that maintain internal and external balance in an economy. According to Musumba, (2015) volatility of exchange rates mostly probably lead to instability in both external and internal balance. Charles (2016) showed that depreciation of the exchange rate only offer protection to domestic industry when the domestic cost of production increases much less than the rate of depreciation, while prices of imported equivalent increases by the full amount of the depreciation.

Obadan (2016) argued that changes in exchange rate have a powerful effect on imports and exports of the countries concerned through effects on relative prices of goods. Artis (2014) considered the

exchange rate to be an important conditioning variable for counter-inflationary policy. This stems from the basic make-up model of pricing and the view that nominal wages tend to adjust to price changes. Volatility under this condition conveys information about the fundamentals in the economy and a fast-depreciating local currency may fuel inflationary expectations (Makinen & Labonte, 2016). Maina, (2015) recommended that a fast depreciating local currency can create instability within other macroeconomic variables has necessitated the efforts by the Central Bank, the pivot monetary authority to put in place different measures at stabilizing the local currency. According to Kimoro, (2014) foreign exchange market management aims at achieving a realistic exchange prices that will aid economic growth and achieve a relative stability in the value of money. It is pertinent to note that a lasting solution to the problem of achieving a realistic exchange rate will only be found if we get to the root cause of the upward sloping demand curve and the almost vertical supply curve of foreign exchange and develop a framework that will ensure that foreign exchange is money demand for productive purposes. Makinen & Labonte, (2016) argued that there is the need to investigate the impact of this fluctuating exchange rate on the profitability of forex bureau.

4.5.2 Effect of interest rates on profitability of forex Bureau

The findings presented in table 4.6 showed that a unit increase in interest rates lead to 0.150 unit increase in profitability of exchange bureaus. At the significance level of 5%, interest rate was statistically significant in the model since ($t = 0.097$, p-value = 0.003 which was less than $\alpha = 0.05$).

According to Jha, (2013) there is a direct relationship between interest rate and foreign exchange an increase in the interest rate can mean a decrease in the foreign exchange rate for the country's currency and inflow of capital attracted by attractive interest rate. Kimoro, (2014) noted that interest rates and exchange rates have typically found mixed and conflicting results. An increase

in interest rate is necessary to stabilize the exchange rate depreciation and to curb the inflationary pressure and thereby helps to avoid many adverse economic consequences. Lama.E. (2016) was for the opinion that the high interest rates imperil the ability of the domestic firms and banks to pay back the external debt and thereby reduce the probability of repayment; as a result, and because the relationship is not clear, there is need to establish the empirical relationship between interest rate and exchange rate. In the economy based on the market, it is necessary to review exchange rate policy from the standpoint of establishing an environment for corporations to earn profits. Low exchange rates make exports cheaper and imports more expensive. Therefore depreciation of currency could trigger inflationary pressures in the economy. Kumar, & Clark, (2014) argued that the demand for exports and lower the demand for imports. So the overall effect on the balance of payments depends on the price elasticity of exports and imports.

Makinen & Labonte, (2016) was for the opinion that interest rates are also considered to have their own particular relevance for foreign exchange trading because of what is known as interest rate parity. When the currency has risen to an equilibrium price level where its cost is no longer offset by gains from its higher interest rate, it reaches interest rate parity and further investment flows from abroad come to a halt. Marshall, & Weetman, (2013) concluded that economy based on the market, it is necessary to review exchange rate policy from the stand point of establishing an environment earning profits. Low exchange rates make exports cheaper and imports more expensive (Kumar & Clark, 2014). When the exchange rate falls imports get more expensive and exports cheaper (Omoke, 2016). That should raise the demand for exports and lower the demand for imports. So, the overall effect on the balance of payments depends on the price elasticity of exports and imports.

4.5.3 Effect of gross domestic product (GDP) on profitability of forex bureau

The findings presented in table 4.6 showed that a unit increase in GDP growth rate lead to -0.029 unit decrease in profitability of exchange bureaus. At the significance level of 5%, GDP growth rate was statistically insignificant in the model since ($t = 0.106$, p-value = 0.916 was greater than $\alpha = 0.05$).

According to Becker, Debelle & Fabbro, (2015) gross domestic product is a fundamental economic indicator is one of the most closely watched indicators used by forex traders. The level of the GDP is commonly used by economists and fundamental traders to assess the level of growth and economic health in a country's economy. The data can also be used to provide a sense of the standard of living prevailing in a nation. Dickey, & Fuller, (2014) argued that Gross Domestic Product indicator is typically expressed on an annualized basis, and it measures the overall value of the productivity of an economy. According to Flannery, &James, (2013) GDP can be computed in three ways known as the product (or output) approach, expenditure approach and the income approach, which should theoretically yield similar results.

According to Bikker, & Hu, (2014) the GDP indicator provides economists and forex traders with one of the most important pieces of information with which to gauge if a nation's economy is growing healthily or contracting in a recessionary business environment. Franco (2014) argued that the GDP indicator usually signals a strong and healthy economy when it is growing at an annualized rate. At such moderate growth levels, the GDP will not usually signal that too much inflation may result, although higher growth levels could signal excessive inflationary pressures building within the economy. Brucaite, & Yan (2015) concluded that lower growth than that is often seen as a signal of a weak economy, while a negative number is considered recessionary or even a signal of a depression. According to Bikker, & Hu, (2013), GDP declines for several

months, then that is considered a temporary recession, but if it falls by more than ten percent for several years, then that indicates an economic depression for the country.

4.5.4 Effect of Inflation on profitability of forex bureau

The findings presented in table 4.6 showed that a unit increase in inflation rates lead to 3.555 unit increase in profitability of exchange bureaus. At the significance level of 5%, interest rate was statistically significant in the model since ($t = 16.624$, p-value = 0.000 was less than $\alpha = 0.05$).

The study findings is in agreement with Ugwunta & Okanya, (2013) findings who concluded that inflation is an increase in the price of everything and this will definitely affect foreign exchange rates. Lutz, N. (2016) also added that exchange rates are, after all, simply the price of one currency when expressed in another. The price of a currency is included in those prices of everything, so in a sense it's simply one more price that changes as inflation rises. Bundi. (2013) argued that traded goods should cost the same everywhere after accounting for transport costs goods that are cheap in other county people will buy in that county for more profit and therefore their trading activities will push up the price in other countries until eventually the prices in all countries. According to Clark, Tamirisa, & Shang-Jin, (2014) exchange rates, consider that the rise in prices caused by inflation only takes place in the currency which is experiencing the inflation. Mundell, (2013) was for the opinion that inflation can be viewed as a general increase in the price of goods and services or a decline in the value of the currency used to purchase those goods and services. Therefore, foreign exchange rates change in response to the different inflation rates in different currencies.

On the contrary Dornbusch, & Fischer, (2013) argued that currency exchange rates stay static in the face of expected future inflation. They may change due to other causes, but not because of inflation. According to Helpern, & MacDonald, (2016) a fall in the exchange rate would make goods and services on a country cheaper and we would have people selling their currency to buy

cheap good and services. Omoke, (2016) argued that inflation does not change spot foreign exchange rates; rather, spot rates fall in response to actual price changes. Forward exchange rates reflect expected inflation, but spot exchange rates don't. Additionally Lama, (2016) argued that forward, exchange rates that reflect expectations of future inflation. Spot exchange rates reflect current prices, while forward exchange rates reflect prices after the effects of expected inflation.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

This chapter presents the summary of findings of the study, conclusion, recommendations and suggestions for further research based on the findings.

5.1 Summary of findings

The findings presented in table 4.6 showed that a unit increase in interest rates lead to 0.150 unit increase in profitability of exchange bureaus. At the significance level of 5%, interest rate was statistically significant in the model since (t = 0.097, p-value = 0.003 which was less than α = 0.05). The findings also revealed that a unit increase in interest rates lead to 0.150 unit increase in profitability of exchange bureaus. At the significance level of 5%, interest rate was statistically significant in the model since (t = 0.097, p-value = 0.003 which was less than α = 0.05). The findings further showed that a unit increase in GDP growth rate lead to -0.029 unit decrease in profitability of exchange bureaus. At the significance level of 5%, GDP growth rate was statistically insignificant in the model since (t = 0.106, p-value = 0.916 was greater than α = 0.05). Finally, the findings revealed that a unit increase in inflation rates lead to 3.555 unit increase in profitability of exchange bureaus. At the significance level of 5%, interest rate was statistically significant in the model since (t = 16.624, p-value = 0.000 was less than α = 0.05).

5.2 Conclusion

The study findings concluded that market volatility a currency spread determinant statistically had no significant on profitability of foreign exchange bureaus. The findings, however, revealed a weak positive correlation between the market volatility and profitability of exchange bureaus.

Interest rates had a significant statistical impact on profitability of exchange bureaus. This was revealed to be a weak inverse relationship from the correlation analysis.

GDP growth rate, on the other hand, was revealed to have no significant statistical impact on profitability of the foreign exchange bureaus. This was mainly attributed to the fact that GDP is from different industries and not just the financial sector. A correlation analysis of GDP growth rate and profitability of exchange bureaus was actually weak and tended towards zero.

Inflation had a significant statistical impact on the profitability of foreign exchange bureaus. This relationship was revealed to be strong and positive through the correlation analysis.

5.3 Recommendation

The study recommends that a borrower or lender should assess the bureaus tolerance for variability in earnings before choosing a method for mitigating currency risk and adopt a strategy for managing currency risk consistent with the bureaus overall risk policy.

The study recommends that forex bureaus should explore avenues to enhance capacities within them for managing foreign exchange risk. Forex bureaus should enforce forex business plans, operational manuals and framework, which evidently shows the what and how of currency risk assessment procedures and implementation of currency risk management strategies.

Management should opt for cost effective strategies for more significant positive relationship between foreign exchange risk management and financial performance. It would be profitable to adopt these strategies and probably consider other strategies only when their costs are low because investment gains may be small relatively to business size.

5.4 Limitation of the study

This study suggests that it would be ideal to research on how foreign exchange risk management compares to other risk management, specifically credit risk management and financial risk management to the financial performance of forex bureaus in Kenya.

The global exchange market is dynamic; therefore, experimental studies need to be undertaken within the context of the development of capital markets in foreign exchange risk hedging by firms. This could be through the introduction of innovative derivative instruments such as futures contracts, interest rate swaps, exchange rate swaps, and their Significance in foreign exchange risk management.

An important extension to this study would be to replicate this research to similar developing nations, and more importantly conduct comparative country-to-country studies. This will either validate or not validate the findings and hence give it a universal face. In the process, other important findings may be unravelled given the changes that are taking place globally.

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APPENDIX 1: INTRODUCTORY LETTER

Dear respondent,

I am a student from Maseno University undertaking my Masters in Business Administration (Finance Option) Department of Accounting and Finance, School of Business and Economics. This data sheet aims at establishing **RELATIONSHIP BETWEEN CURRENCY SPREAD DETERMINANTS AND FINANCIAL PERFOMANCE OF FOREIGN EXCHANGE BUREAUS IN KENYA.** Responses from you will not only be used for academic purposes and will be treated with utmost confidentiality. Please be objective as all comments will be taken into account.

Yours sincerely,

OCHIENG FEDINARD ARUNGA

Thank you for your cooperation.

APPENDICES II: DATA SHEET FOR FX PERFORMANCE MEASUREMENT

Market volatility	Interest Rates	GDP % growth rate	Inflation	Profitability % decline
3.20	20.44	6.79	7.01	23.01
3.21	19.00	6.79	6.91	21.15
3.22	23.79	6.66	5.16	18.13
3.23	24.61	6.59	6.73	15.93
3.20	14.72	6.59	5.35	10.26
3.24	17.95	6.11	7.05	23.05
3.25	15.14	5.19	6.95	21.19
3.26	23.02	5.19	5.20	18.17
3.20	24.58	6.79	6.70	15.90
3.27	17.32	6.79	5.42	10.33
3.28	20.52	6.66	7.09	23.09
3.29	19.08	6.59	6.99	21.23
3.20	23.77	6.59	5.14	18.11
3.30	24.68	6.11	6.80	16.00
3.18	14.70	5.19	5.33	10.24
3.17	17.88	5.19	6.98	22.98
3.16	15.05	6.79	6.86	21.10
3.15	22.91	6.79	5.09	18.06
3.18	24.56	6.66	6.68	15.88
3.14	17.19	6.59	5.29	10.20
3.13	20.37	6.59	6.94	22.94
3.12	18.91	6.11	6.82	21.06
3.18	23.75	5.19	5.12	18.09
3.11	24.49	5.19	6.61	15.81
3.10	14.62	6.79	5.25	10.16
3.09	17.80	6.79	6.90	22.90
3.18	15.07	6.66	6.88	21.12
3.08	22.84	6.59	5.02	17.99
3.20	24.58	6.59	6.70	15.90
3.21	17.26	6.11	5.36	10.27
3.22	20.46	5.19	7.03	23.03
3.23	19.02	5.19	6.93	21.17
3.20	23.77	5.19	5.14	18.11
3.24	24.62	5.19	6.74	15.94
3.25	14.77	6.79	5.40	10.31
3.26	17.97	6.79	7.07	23.07
3.20	15.09	6.66	6.90	21.14
3.27	23.03	6.59	5.21	18.18
3.28	24.66	6.59	6.78	15.98
3.29	17.34	6.11	5.44	10.35
3.20	20.44	5.19	7.01	23.01

4.47	19.09	6.79	7.00	21.24
4.35	23.75	6.66	5.12	18.09
4.34	24.55	6.66	6.67	15.87
4.33	14.68	6.59	5.31	10.22
4.32	17.86	6.11	6.96	22.96
4.35	15.07	6.11	6.88	21.12
4.31	22.90	5.19	5.08	18.05
4.30	24.51	6.79	6.63	15.83
4.29	17.17	6.66	5.27	10.18
4.35	20.42	6.66	6.99	22.99
4.28	18.90	6.59	6.81	21.05
4.27	23.67	6.11	5.04	18.01
4.26	24.47	6.11	6.59	15.79
4.35	14.70	5.19	5.33	10.24
4.25	17.79	6.79	6.89	22.89
4.37	15.09	6.66	6.90	21.14
4.38	22.97	6.66	5.15	18.12
4.39	24.60	6.59	6.72	15.92
4.40	17.28	6.11	5.38	10.29
4.37	20.44	6.11	7.01	23.01
4.41	19.03	5.19	6.94	21.18
4.42	23.82	6.79	5.19	18.16
4.43	24.64	6.66	6.76	15.96
4.37	14.72	6.66	5.35	10.26
4.44	17.98	6.59	7.08	23.08
4.45	15.17	6.11	6.98	21.22
4.46	23.05	6.11	5.23	18.20
4.37	24.58	5.19	6.70	15.90
4.47	17.35	5.19	5.45	10.36
4.35	20.42	6.79	6.99	22.99
4.34	18.96	6.66	6.87	21.11
4.33	23.73	6.66	5.10	18.07
4.32	24.53	6.59	6.65	15.85
4.35	14.70	6.11	5.33	10.24
4.31	20.38	6.11	6.95	22.95
4.30	18.92	5.19	6.83	21.07
4.50	23.69	6.79	5.06	18.03
4.56	24.56	6.79	6.68	15.88
4.49	14.63	6.66	5.26	10.17
4.48	17.81	6.59	6.91	22.91
4.47	14.98	6.59	6.79	21.03
4.56	22.94	6.11	5.12	18.09
4.46	24.46	5.19	6.58	15.78
4.58	17.25	5.19	5.35	10.26
4.59	20.45	6.79	7.02	23.02
4.60	19.01	6.79	6.92	21.16

4.61	23.80	6.66	5.17	18.14
4.58	24.58	6.59	6.70	15.90
4.62	14.76	6.59	5.39	10.30
4.63	17.96	6.11	7.06	23.06
4.64	15.15	5.19	6.96	21.20
4.58	22.96	5.19	5.14	18.11
4.65	24.65	6.79	6.77	15.97
4.66	17.33	6.79	5.43	10.34
4.67	20.53	6.66	7.10	23.10
4.58	18.99	6.59	6.90	21.14
4.68	23.87	6.59	5.24	18.21
4.56	24.56	6.11	6.68	15.88
4.55	14.69	5.19	5.32	10.23
4.54	17.87	5.19	6.97	22.97
4.53	15.04	6.79	6.85	21.09
4.56	22.94	6.79	5.12	18.09
4.52	24.52	6.66	6.64	15.84
4.51	17.18	6.59	5.28	10.19
4.50	20.36	6.59	6.93	22.93
4.56	18.97	6.11	6.88	21.12
4.49	23.68	5.19	5.05	18.02
4.48	24.48	5.19	6.60	15.80
4.47	14.61	5.19	5.24	10.15
4.56	17.89	5.19	6.99	22.99
4.46	14.97	6.79	6.78	21.02
4.58	22.96	6.79	5.14	18.11
4.59	24.59	6.66	6.71	15.91
4.60	17.27	6.59	5.37	10.28
4.61	20.47	6.59	7.04	23.04
4.58	18.99	6.11	6.90	21.14
4.62	23.81	5.19	5.18	18.15
4.63	24.63	5.19	6.75	15.95
5.96	14.78	6.79	5.41	10.32
5.90	17.91	6.79	7.01	23.01
5.97	15.16	6.66	6.97	21.21
5.98	23.04	6.59	5.22	18.19
5.99	24.67	6.59	6.79	15.99
5.90	17.25	6.11	5.35	10.26
6.00	20.54	5.19	7.11	23.11
5.88	18.97	5.19	6.88	21.12
5.87	23.74	6.79	5.11	18.08
5.86	24.54	6.79	6.66	15.86
5.85	14.67	6.66	5.30	10.21
5.88	17.89	6.59	6.99	22.99
5.84	15.03	6.59	6.84	21.08
5.83	22.89	6.11	5.07	18.04

5.82	24.50	5.19	6.62	15.82
5.88	17.23	5.19	5.33	10.24
5.81	20.35	6.79	6.92	22.92
5.80	18.89	6.79	6.80	21.04
5.79	23.66	6.66	5.03	18.00
5.88	24.56	6.59	6.68	15.88
5.78	14.60	6.59	5.23	10.14
5.90	17.91	6.11	7.01	23.01
5.91	15.10	5.19	6.91	21.15
5.92	22.98	5.19	5.16	18.13
5.93	24.61	6.79	6.73	15.93
5.90	17.25	6.79	5.35	10.26
5.94	20.48	6.66	7.05	23.05
5.95	19.04	6.59	6.95	21.19
5.96	23.83	6.59	5.20	18.17
5.90	24.58	6.11	6.70	15.90
5.97	14.79	5.19	5.42	10.33
5.98	20.52	5.19	7.09	23.09
5.99	19.08	5.19	6.99	21.23
5.90	23.77	5.19	5.14	18.11
6.00	24.68	6.79	6.80	16.00
5.88	14.70	6.79	5.33	10.24
5.87	17.88	6.66	6.98	22.98
5.86	15.05	6.59	6.86	21.10
5.85	22.91	6.59	5.09	18.06
5.88	24.56	6.11	6.68	15.88
5.84	17.19	5.19	5.29	10.20
5.83	20.37	5.19	6.94	22.94
6.15	18.91	6.79	6.82	21.06
6.21	23.75	6.79	5.12	18.09
6.14	24.49	6.79	6.61	15.81
6.13	14.62	6.66	5.25	10.16
6.12	17.80	6.66	6.90	22.90
6.21	15.07	6.66	6.88	21.12
6.11	22.84	6.59	5.02	17.99
6.23	24.58	6.59	6.70	15.90
6.24	17.26	6.59	5.36	10.27
6.25	20.46	6.11	7.03	23.03
6.26	19.02	6.11	6.93	21.17
6.23	23.77	6.11	5.14	18.11
6.27	24.62	5.19	6.74	15.94
6.28	14.77	5.19	5.40	10.31
6.29	17.97	5.19	7.07	23.07
6.23	15.09	6.79	6.90	21.14
6.30	23.03	6.79	5.21	18.18
6.31	24.66	6.79	6.78	15.98

6.32	17.34	6.66	5.44	10.35
6.23	20.44	6.66	7.01	23.01
6.33	19.09	6.66	7.00	21.24
6.21	23.75	6.59	5.12	18.09
6.20	24.55	6.59	6.67	15.87
6.19	14.68	6.59	5.31	10.22
6.18	17.86	6.11	6.96	22.96
6.21	15.07	6.11	6.88	21.12
6.17	22.90	6.11	5.08	18.05
6.16	24.51	5.19	6.63	15.83
6.15	17.17	5.19	5.27	10.18
6.21	20.42	5.19	6.99	22.99
6.14	18.90	6.79	6.81	21.05
6.13	23.67	6.79	5.04	18.01
6.12	24.47	6.79	6.59	15.79
6.21	14.70	6.66	5.33	10.24
6.11	17.79	6.66	6.89	22.89
6.22	15.08	6.66	6.89	21.13
6.22	22.95	6.59	5.13	18.10
6.22	24.57	6.59	6.69	15.89
6.22	17.24	6.59	5.34	10.25
6.22	20.43	6.11	7.00	23.00
6.23	18.99	6.11	6.90	21.14
6.22	23.76	6.11	5.13	18.10
6.23	24.58	5.19	6.70	15.90
6.23	14.72	5.19	5.35	10.26
6.22	17.90	5.19	7.00	23.00
6.22	15.08	6.79	6.89	21.13
6.22	22.95	6.79	5.13	18.10
6.22	24.57	6.79	6.69	15.89
6.22	17.24	6.66	5.34	10.25
6.22	20.43	6.66	7.00	23.00
6.22	18.98	6.66	6.89	21.13
6.21	23.75	6.59	5.12	18.09
6.21	24.56	6.59	6.68	15.88
6.22	14.71	6.59	5.34	10.25
6.22	17.90	6.11	7.00	23.00
6.22	15.08	6.11	6.89	21.13
6.22	22.95	6.11	5.13	18.10
6.22	24.57	5.19	6.69	15.89
6.23	17.25	5.19	5.35	10.26
6.22	20.43	5.19	7.00	23.00
6.23	18.99	5.19	6.90	21.14
6.23	23.77	5.19	5.14	18.11
6.22	24.57	5.19	6.69	15.89
6.22	14.71	6.79	5.34	10.25

6.22	20.43	6.79	7.00	23.00
6.22	18.98	6.79	6.89	21.13
6.22	23.76	6.66	5.13	18.10
6.22	24.57	6.66	6.69	15.89
6.22	14.71	6.66	5.34	10.25
6.21	17.89	6.59	6.99	22.99
6.21	15.07	6.59	6.88	21.12
6.32	23.05	6.59	5.23	18.20
6.42	24.77	6.11	6.89	16.09
6.52	17.54	6.11	5.64	10.55
6.62	20.83	6.11	7.40	23.40
6.32	19.08	5.19	6.99	21.23
6.72	24.26	5.19	5.63	18.60
6.82	25.17	5.19	7.29	16.49
7.70	15.41	6.79	6.04	10.95
7.10	18.00	6.79	7.10	23.10
7.80	15.88	6.66	7.69	21.93
7.90	23.85	6.59	6.03	19.00
6.90	24.47	6.59	6.59	15.79
6.80	17.04	6.11	5.14	10.05
6.70	20.13	5.19	6.70	22.70
6.60	18.58	5.19	6.49	20.73
6.90	23.66	6.79	5.03	18.00
6.50	24.07	6.79	6.19	15.39
6.40	14.11	6.66	4.74	9.65
6.30	17.20	6.59	6.30	22.30
6.90	14.98	6.59	6.79	21.03
6.20	22.15	6.11	4.33	17.30
6.10	23.67	5.19	5.79	14.99
7.10	17.34	5.19	5.44	10.35
7.20	20.63	6.79	7.20	23.20
7.30	19.28	6.79	7.19	21.43
7.40	24.16	6.66	5.53	18.50
7.10	24.67	6.59	6.79	15.99
7.50	15.21	6.59	5.84	10.75
7.60	18.50	6.11	7.60	23.60
7.70	15.78	5.19	7.59	21.83
7.10	23.05	5.19	5.23	18.20
7.80	25.37	6.79	7.49	16.69
7.90	18.14	6.79	6.24	11.15
6.90	20.33	6.66	6.90	22.90
6.80	18.78	6.59	6.69	20.93
6.70	23.46	6.59	4.83	17.80
6.60	24.17	6.11	6.29	15.49
6.90	14.61	5.19	5.24	10.15
6.50	17.40	5.19	6.50	22.50

6.40	14.48	5.19	6.29	20.53
6.30	22.25	5.19	4.43	17.40
6.90	24.47	6.79	6.59	15.79
6.20	16.44	6.79	4.54	9.45
6.10	19.53	6.66	6.10	22.10
7.10	19.08	6.59	6.99	21.23
7.20	23.96	6.59	5.33	18.30
7.30	24.87	6.11	6.99	16.19
7.40	15.11	5.19	5.74	10.65
7.10	18.00	5.19	7.10	23.10
8.50	15.58	6.79	7.39	21.63
8.60	23.55	6.66	5.73	18.70
8.70	25.27	6.66	7.39	16.59
8.10	17.34	6.59	5.44	10.35
8.80	21.23	6.11	7.80	23.80
8.90	19.88	6.11	7.79	22.03
7.90	23.66	5.19	5.03	18.00
7.80	24.37	6.79	6.49	15.69
7.70	14.41	6.66	5.04	9.95
7.60	17.50	6.66	6.60	22.60
7.90	14.98	6.59	6.79	21.03
7.50	22.45	6.11	4.63	17.60
7.40	23.97	6.11	6.09	15.29
7.30	16.54	5.19	4.64	9.55
7.90	20.33	6.79	6.90	22.90
7.20	18.18	6.66	6.09	20.33
7.10	22.86	6.66	4.23	17.20
8.10	24.67	6.59	6.79	15.99
8.20	14.91	6.11	5.54	10.45
8.30	20.73	6.11	7.30	23.30
8.40	19.38	5.19	7.29	21.53
8.10	23.86	6.79	5.23	18.20
8.50	25.07	6.66	7.19	16.39
8.60	15.31	6.66	5.94	10.85
8.70	18.60	6.59	7.70	23.70
8.10	15.18	6.11	6.99	21.23
8.80	23.75	6.11	5.93	18.90
8.90	25.47	5.19	7.59	16.79
7.90	17.14	5.19	5.24	10.15
7.80	20.23	6.79	6.80	22.80
7.70	18.68	6.66	6.59	20.83
7.60	23.36	6.66	4.73	17.70
7.90	24.47	6.59	6.59	15.79
7.50	14.21	6.11	4.84	9.75
7.40	19.83	6.11	6.40	22.40
7.30	18.28	5.19	6.19	20.43

8.43	23.66	6.79	5.03	18.00
7.73	23.77	6.66	5.89	15.09
7.63	13.81	6.66	4.44	9.35
8.63	18.00	6.59	7.10	23.10
8.73	15.28	6.11	7.09	21.33
8.83	23.25	6.11	5.43	18.40
8.93	24.97	5.19	7.09	16.29
8.63	17.34	6.79	5.44	10.35
9.03	20.93	6.66	7.50	23.50
9.13	19.58	6.66	7.49	21.73
9.23	24.46	6.59	5.83	18.80
8.63	24.67	6.11	6.79	15.99
9.33	15.51	6.11	6.14	11.05
9.43	18.80	5.19	7.90	23.90
8.43	14.98	6.79	6.79	21.03
8.33	22.75	6.66	4.93	17.90
8.23	24.27	6.66	6.39	15.59
8.13	16.84	6.59	4.94	9.85
8.43	20.33	6.11	6.90	22.90
8.03	18.48	6.11	6.39	20.63
7.93	23.16	5.19	4.53	17.50
7.83	23.87	6.79	5.99	15.19
8.43	14.61	6.66	5.24	10.15
7.73	17.10	6.66	6.20	22.20
7.63	14.18	6.59	5.99	20.23
8.63	23.05	6.11	5.23	18.20
8.73	24.77	6.11	6.89	16.09
8.83	17.54	5.19	5.64	10.55
8.93	20.83	5.19	7.40	23.40
8.63	19.08	6.79	6.99	21.23
9.03	24.26	6.66	5.63	18.60
9.13	25.17	6.66	7.29	16.49
9.23	15.41	6.59	6.04	10.95
8.63	18.00	6.11	7.10	23.10
9.33	15.88	6.11	7.69	21.93
9.43	23.85	5.19	6.03	19.00
9.28	24.47	6.79	6.59	15.79
9.18	17.04	6.66	5.14	10.05
9.08	20.13	6.66	6.70	22.70
8.98	18.58	6.59	6.49	20.73
9.28	23.66	6.11	5.03	18.00
8.88	24.07	6.11	6.19	15.39
8.78	14.11	5.19	4.74	9.65
8.68	17.20	6.79	6.30	22.30
9.28	14.98	6.66	6.79	21.03
8.58	22.15	6.66	4.33	17.30

8.48	23.67	6.59	5.79	14.99
9.48	17.34	6.11	5.44	10.35
9.58	20.63	6.11	7.20	23.20
9.68	19.28	5.19	7.19	21.43
9.78	24.16	6.79	5.53	18.50
9.48	24.67	6.66	6.79	15.99
9.88	15.21	6.66	5.84	10.75
9.98	18.50	6.59	7.60	23.60
10.08	15.78	6.11	7.59	21.83
9.48	23.05	6.11	5.23	18.20
10.18	25.37	5.19	7.49	16.69
10.28	18.14	6.79	6.24	11.15
9.28	20.33	6.66	6.90	22.90
9.18	18.78	6.66	6.69	20.93
9.08	23.46	6.59	4.83	17.80
8.98	24.17	6.11	6.29	15.49
9.28	14.61	6.11	5.24	10.15
8.88	17.40	5.19	6.50	22.50
8.78	14.48	5.19	6.29	20.53
8.68	22.25	6.79	4.43	17.40
9.28	24.47	6.66	6.59	15.79
8.58	16.44	6.66	4.54	9.45
8.48	19.53	6.59	6.10	22.10
9.61	19.21	6.11	7.12	21.36
9.35	23.73	6.11	5.10	18.07
9.18	24.37	5.19	6.49	15.69

APPENDIX III: LICENCED FOREIGN EXCHANGE BUREAUS

CENTRAL BANK OF KENYA		
DIRECTORY OF LICENCED FOREIGN EXCHANGE BUREAUS		
	Name of Bureau	**Date of Licensing**
1	Alpha Forex Bureau Ltd	11-Jan-03
2	Arcade Forex Bureau Ltd	1-Nov-03
3	Aristocrats Forex Bureau Ltd	1-Jan-95
4	Avenue Forex Bureau ltd	29-Sep-08
5	Bamburi Forex Bureau Ltd	1-Nov-03
6	Bay Forex Bureau (Nairobi) Ltd	16-Aug-95
7	Boston Forex Bureau Ltd	26-May-14
8	CBD Forex Bureau	24-Nov-09
9	Central Forex Bureau Ltd	1-Sep-95
10	Classic Forex Bureau Limited	25-Jul-08
11	Commercial Forex Bureau Limited	16-May-08
12	Conference Forex Bureau Company Limited	30-Jan-08
13	Continental Forex Bureau Ltd	21-Jul-95
14	Cosmos Forex Bureau Ltd	1-Sep-95
15	Crater Forex Bureau Ltd	1-Sep-95
16	Crown Bureau De Change Ltd	6-Jun-95
17	Dalmar Exchange Bureau Ltd	15-Dec-03
18	Downtown Cambio Forex Bureau Ltd	2-Nov-95
19	Forex Bureau Afro	17-Feb-98
20	x Bureau Ltd	15-Dec-03
21	Gateway Forex Bureau Ltd	1-Nov-03
22	Giant Forex Bureau de Change Ltd	21-May-98
23	Give and Take Forex Bureau Ltd	1-Nov-03
24	Glory Foreign Exchange Bureau Bureau Ltd	21-May-98
25	GNK Forex Bureau	1-Nov-03
26	Green Exchange Forex Bureau Ltd	17-Aug-09

27	Industrial Area Forex Bureau Ltd	1-Nov-03
28	Island Forex Bureau Ltd	15-Dec-03
29	Junction Forex	1-Dec-05
30	Kenza Exchange Bureau Limited	9-Sep-03
31	La'che Forex Bureau	10-Apr-04
32	Legacy Forex Bureau Ltd	24-May-16
33	Leo Forex Bureau	21-May-99
34	Link Forex Bureau	25-Apr-95
35	Lion Bureau De Change Ltd	22-Feb-12
36	Magnum Forex Bureau De Change Ltd	17-Aug-09
37	Maritime Forex	1-Nov-03
38	Metropolitan Bureau De Change	7-Sep-95
39	Middletown Forex Bureau Ltd	1-Jan-98
40	Mona Bureau De Change Ltd	1-Dec-05
41	Moneypoint Forex Bureau Ltd	27-Jun-08
42	Morgan Forex Bureau De Change	25-Jul-08
43	Mustaqbal Forex Bureau Ltd	19-Dec-05
44	Muthaiga-ABC Forex Bureau Ltd	13-Nov-08
45	Nairobi Bureau De Change Ltd	6-Jul-95
46	Namanga Forex Bureau Ltd	15-Dec-03
47	Nawal Forex Bureau Ltd	15-Dec-03
48	Offshore Forex	12-May-08
49	Pacific Forex Bureau	27-Nov-07
50	Peaktop Bureau De	1-Sep-04
51	Pearl Forex Bureau	1-Jan-98
52	Pel Forex Bureau	25-Sep-95
53	Penguin Forex	1-Nov-03
54	Pwani Forex Bureau	16-Aug-95
55	Rand Forex Bureau	28-May-12
56	Regional Forex	28-Apr-08
57	Rift Valley Forex	1-Jun-04

	Bureau Ltd	
58	Safari Forex Bureau Ltd	1-Dec-04
59	Satellite Forex	17-Jun-04
60	Simba Forex Bureau	16-Apr-08
61	Sisi Forex Bureau	22-Oct-12
62	Sky Forex Bureau	12-May-06
63	Solid Exchange Bureau Ltd	6-Jul-95
64	Sterling Forex	27-Nov-95
65	Sunny Forex Bureau	26-Jun-08
66	Taipan Forex Bureau	6-Jun-95
67	Tower Forex	24-Jul-12
68	Trade Bureau De Change Ltd	21-May-99
69	Travellers Forex	7-Sep-95
70	Travel Point Forex Bureau Limited	11-Feb-08
71	Union Forex Bureau	1-Jan-99
72	Ventures Forex	26-Aug-13
73	Victoria Forex Bureau De Change	1-Sep-05
74	Wallstreet Bureau De Change Ltd	8-Jan-99
75	Westlands Forex Bureau Ltd	1-Nov-03
76	Yaya Centre Exchange Bureau Ltd	6-Jun-95