

**THE EFFECT OF FOREX TRADING ON THE FINANCIAL PERFORMANCE OF
COMMERCIAL BANKS IN KENYA**

BY

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2018

DECLARATION

I declare that this is my original work and has never been presented for a degree in any other university

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DEDICATION

I dedicate this project to my husband Brian Kavila, without his guidance, support and encouragement it would have been impossible to complete this project. To my children Jude and Luke Kioko, though they may not be familiar with the topic under study, without their patience and understanding, this project would have been difficult to complete.

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LIST OF ABBREVIATIONS

ANOVA- Analysis of variance

BIS- Bank for International Settlement

CAMEL-Capital adequacy, Asset quality, Management quality, Earnings and profit, Liquidity

CAR- Capital Adequacy Ratio

CBK-Central Bank of Kenya

CBR-Central Bank Rate

CMA- Capital Markets Authority

EBIT- Earnings Before Interest and Taxes

ECB-European Central Bank

HQLA- High quality liquid assets

IFE- International Fisher Effect

IRP- Interest Rate Parity

KES- Kenyan Shilling

OTC- Over the Counter

PPP- Purchasing Power Parity

ROA- Returns on Assets

ROE Return on Equity

Rs- Indian Rupee

UK- United Kingdom

US- United States

USD- US Dollar

ABSTRACT

The forex market has experienced major changes not only in size but also in its operations due to structural shifts in the world economy and the international financial system. These changes in the forex market have occurred mainly due to major financial deregulation across the globe including elimination of government controls, fundamental change in the international monetary system from the fixed exchange rates to a more flexible system and development of many financial instruments and derivative products. Commercial banks across the globe have also grown in the adoption of new derivative products to keep with the trends in the forex market and have moved from traditional banking activities to the uptake of more sophisticated derivative products to offer more value to their clients and also improve their financial performance. The objective of this study was to evaluate the impact of forex trading on the financial performance of commercial banks in Kenya. Descriptive research design was adopted and secondary data on the return on asset, spot trading, notional value of derivative contracts, firm size, liquidity ratio and capital adequacy ratio was derived from the balance sheet and income statements of the audited annual financial reports of the commercial banks for the period 2013 to 2017. Return On Asset was used as the dependent variable, spot trading, derivative contracts were used as predictor variables and firm size, liquidity ratio, capital adequacy ratio were used as independent variables. The study established that the forex trading variables investigated by the study namely; Spot trading, forwards, swaps and options, firm size, liquidity ratio and capital adequacy have been constantly changing throughout the study period. As such, both high and low rates have been experienced in the years. The study thus concludes that there is no stability in forex trading variables in Kenya which may be caused by numerous factors. This results in the banks having different levels of performance at different times and periods. The study also established that forex trading variables do have a significant and positive effect on the financial performance (ROA) of the banking industry. The study recommends that the issues related to foreign exchange trading should always be taken into account to improve the banks foreign exchange transactions and hence performance. The study recommends that Forex trading among commercial banks should be continued and capital should be invested in projects that maximize returns. The governance structures need to be put in place so as to enhance returns on capital and assets and in turn maximize returns to the commercial banks. The researcher recommends a study on the effect of Forex trading on the financial performance of other financial institutions in Kenya. This would help compare the results. The researcher also recommends a study on the implications of risk management practices on non-funded income of financial institutions.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The forex market provides a means of making payments and transferring money across borders from one currency to another and hence determination of exchange rates. Since the early 1970's the forex market has experienced major changes not only in size but also in its operations due to structural shifts in the world economy and the international financial system. Forex markets have grown since 1970's due to a climate of much greater freedom and competition, and the role of forex markets have also changed profoundly and have developed complex instruments and techniques to exploit the structural shifts. The changes in the forex market have occurred mainly due to major financial deregulation across the globe including elimination of government controls, fundamental change in the international monetary system from the fixed exchange rates to a more flexible system and development of many financial instruments and derivative products due to new thinking in terms of theory and finance. Changes in the forex market and development of new products played a role a major role in the credit crisis in 2007 and more stringent controls and regulation were put in place to govern the forex market and introduce transparency in the market.

Economic theories dealing in foreign exchange trading, Purchasing Power Parity (PPP), Interest Rate Parity and International Fisher effect propagate a no arbitrage theory; whereby exchange rates adjust in tandem to the rate of interest or index on which it's hinged on to eliminate any profits. However several critiques have emerged on the theories in that they do not consider the occasional divergence between money market interest rates and price of forward contracts. Additionally, exchange rate can be affected by several other considerations such capital movement and tariffs hence creating arbitrage opportunities.

Questions have been raised over time then on whether forex trading adds any value to firms or entities by taking advantage of market inconsistencies or its usage is purely for hedging purpose and to access hard to trade market or assets hence providing no arbitrage opportunities. Several empirical studies carried out on financial and non-financial firms both internationally and locally

on forex trading and use of derivatives has been mixed, Smith and Stultz (1985) showed that forex trading has been used not only for hedging purpose but also for speculative purpose in which positions and contracts are entered into voluntarily to take advantage of market inefficiencies and capitalize on profits hence taking advantage of arbitrage opportunities. Jin and Jorion (2006) on the other hand indicated an insignificant relationship on the use of forex trading and the value of a firm insinuating that any forex trading was only used for hedging purpose and not as a profit making incentive.

1.1.1 Forex Trading

The currency market (foreign trading or exchange) is a decentralized global market for forex trading and it involves exchanging currencies at pre-determined prices which are dependent on the demand and supply forces. Currencies are however commonly traded as part of the derivative contracts in futures, forwards, options and swaps. Derivatives are contracts that derive value or price dependent on a different entity or asset. The different asset could be an index or rate of interest. The purposes of derivative contracts are majorly speculation, hedging and accessing hard to trade market or assets. The derivative contracts are mainly of four types, that is derivative swaps, derivative options, derivative futures and derivative forwards.

The currency or forex market can either be used for trading (speculation) or for hedging purpose. Forex exchange hedging is a protective mechanism of a person's position against adverse movement in the currency pair. Hedging can be created by a forex trader to protect an existing position from adverse movement in the currency pair by holding long and short position simultaneously on the same currency pair. The strategy is referred to as a "perfect hedge" because it eliminates all of the risk (and therefore all of the potential profit) associated with the trade while the hedge is active (Hull, 1998). The volatility associated with the price of an asset can be eliminated by hedging which is done by taking offsetting contrary positions to what the counter party is holding. Speculation in currencies involves selling, buying or holding of currencies to make a gain in favorable price fluctuation and it involves gaining a profit from betting on the directional movement of the asset.

Economic theories found in the currency exchange market deal with conditions of parity. Parity conditions are the prices at which two different currency pairs should be exchanged at based on

other determinants like foreign exchange and rate of interest. These theories imply that when parity conditions are inexistent arbitrage opportunities will occur. However these opportunities are however quickly identified and abolished even before they are exploited on by speculators in the particular markets.

There are 3 major economic theories on foreign exchange trading: International Fisher Effect (IFE), Interest Rate Parity (IRP), and Purchasing Power Parity (PPP).

Purchasing Power Parity (PPP) is an economic theory developed by Gustav Cassel. The theory suggests that the level of cost between two different nations after an exchange rate adjustment should be equivalent to one another. This one price law suggests that an identical good should have a similar cost around the world. PPP theory states that an arbitrage opportunity will be created if after an adjustment to a rate of exchange there is a huge price differential among two different countries since the item or good can be acquired from the country with the lowest price (Cassel, 1918).

The IRP theory is similar to the PPP theory and implies that there should be identical rates of interest between two different countries for two identical assets so that there are no arbitrage opportunities and the risk of the assets should also be similar. This concept of parity is the same as the law of one price, which asserts that an asset should yield the same return to a similar asset in a different country, if this does not occur the exchange rates will re-adjust to make up for the differences (Bekaert et al, 2007).

The International Fisher Effect (IFE) theory which was designed by economist Irving Fisher in the 1930's implies that the exchange price between two different nations should vary by the same quantity to the differential between the nominal interest rates. If the interest rate in one country is higher than another, the currency of the country with the higher interest rate will depreciate in contrast to the country with the lower interest rate by a similar margin (Buckley, 2004).

1.1.2 Financial Performance

Various measures have been used by researchers (Halling and Hayden 2006, Jorion 2006, Graham and Rogers 2002) to capture organizational performance including net income, Sales,

Return on Investments (ROI), Return on sales (ROS), and a combination of ROI and ROS, return on assets (ROA) and market to book value of the equity as well as profitability and market share/growth.

According to Gilbert (2007) ROE and ROA are used to assess industry performance and market structure trends by bank regulators and analysts in assessing the financial gain of a bank. The Return on Equity is a technique of assessing the financial performance of an institution in comparison to each other. ROE looks at a share holders' investment return and allows an investment comparison between a bank's share and other investment opportunities from a shareholders perspective (Navapan, 2003).

The complexity of banking institutions has soared in the recent past, whereas it is important for a bank to generate earnings, the composition and volatility of these earnings should be taken to account (ECB, 2010). Wealth creation and preservation for its institutional owners is the ultimate purpose of any profit seeking organization. This therefore means that banks need to be profitable not only to ensure sustainability of its intermediate function between depositors and borrowers but also growth of shareholders investment.

ROA indicates how effectively an entity is taking advantage of its base asset earnings. ROA is the most popular way of comparing banks whereas monitoring their own performance from period to period and it also gives insight on how well a bank is managing its risk unlike ROE (Hannagan, 2008). Khrawsh (2011), states that a high ROA shows the bank is efficiently utilizing its resources.

1.1.3 Forex Trading and Financial Performance

Several empirical studies have been conducted with time on the use of derivatives by banks and companies, these studies have shown that forex trading or use of derivatives has been instrumental as a hedging mechanism that is to minimize an entities cash flow volatility and also have been useful for speculative purpose due to market imperfections and by taking advantage of arbitrage opportunities.

Chamberlain, Howe and Popper, (1995) implied that banks use derivatives mainly as a hedging tool ,they studied U.S bank holding companies and Large banks in Japan and indicated that the

fluctuation of the foreign exchange rate will indirectly and directly affect banks. The study concluded that long dollar position of U.S bank holding companies was replicated in their holdings of foreign assets and liabilities to offset their long USD position. This was supported by Jin and Jorion (2006) who studied a sample of 119 U.S oil and gas producers for a 3 year period from 1998 and concluded that there is insignificant existing correlation in the value of companies that do not hedge and firms that hedge.

Recent global financial crisis in 2007 show that derivatives can be used for other reasons other than reducing the volatility of cash flows but also for speculative purpose. Speculation can add value to an entity when the derivative contracts carry a premium that is not the same to the risk undertaken and also in the generation of profits through active trading activities. Empirical study conducted by Allayannis and Weston (2001) looked at the interconnection between the value of a firm and forex trading between 720 large firms for a 5 year period from 1990 and found that institutions that used derivatives have a higher hedging premium of 4.87% in comparison to institutions that did not use derivatives.. This empirical study affirms a prior research done by Smith and Stultz (1985) which concluded that use of derivative instruments minimized the cost of a transaction due to financial distress while lowering tax liability levels. Empirical studies carried internationally show mixed results on the effect of forex trading on the value of financial and non-financial entities.

1.1.4 Commercial Banks in Kenya

Commercial banks are regulated and licensed under the Banking Act, Cap 488 and guided by the Prudential Regulations .As at December 2017 there were 43commercial banks licensed in Kenya; however 3of the banks are under statutory management or in receivership and 2 of the banks (May Fair Bank and Dubai Islamic Bank were incorporated in 2017) and SBM Bank bought Chase Bank (which had ceased its operations between 2016- 2018) in 2018(Central bank directory, 2017). 26 banks are actively trading in Spot, forwards, swaps and options and 11 trading in spot transactions only as per data from their audited annual financial statements as at end of 2017.

Banks have a very significant role in propagating the growth of an economy and deposits in banks represent money in liquid form. On a micro economic level, banks are the primary source

of credit to small and medium enterprises as well as individuals. Omotunde (2002) asserts that a financial system that is sound will contain, predominantly, banks with capital that is adequate to withstand probable adverse shocks, and will have staff skilled to assess conditions and develop solutions to manage liquidity risk, credit risk, market risk and other risks.

There has been an increased importance of financial markets perception of activities in banks. Commercial banks forex activities have become contentious especially after the 2008 global financial crisis. In this regard, the effective use of forex on risk value of a firm and its measurement has become increasingly important in banking due to the fact that banks dominate most forex markets (Allen and Sanatomero, 1997).

In Kenya this form of market dynamics has also been experienced and commercial banks are slowly moving from traditional banking and embracing forex trading and use of derivatives not only to cover their positions but also as a means of speculating. According to an article in the business daily by Irungu (2011), banks made Sh5B profit in 6 months on forex trading. Another article in the business daily indicated that CBK's profit had tripled to Sh 48B due to sale of forex to commercial banks. (Irungu, 2016).

On February 8 2018, the Capital Markets Authority (CMA) licensed Execution Point Ltd a local subsidiary of British firm Davisa UK Limited to operate as an online foreign exchange broker, becoming the first such company in Kenya. The non-dealing firm would act as a connector between currency exchange market and foreign exchange clients for a fee or a spread in the price. This license was the first to be issued by CMA to an online broker and it brought supervisory and oversight roles to be under the CMA (Correspondent, 2018). The above articles show that forex trading has become an important aspect of commercial banks in Kenya and worth to be researched on.

1.2 Research Problem

Forex trading and use of derivative contracts by banks has risen in the past two decades and the main purpose for entities to engage in these contracts has been for hedging and speculative purpose. Research investigations conducted empirically on the impact of forex trading activities on the financial performance or value of an entity has been mixed as indicated by Modigliani and Miller (1958) who suggested that in the absence of market imperfection, financial policies cannot

change an entities value. This conclusion was supported by Jin and Jorion (2006) who concurred there is an insignificant relationship in the values of hedged entities compared to non-hedged entities and Chamberlain et al (1995) who concluded that U.S bank holding and large Japanese banks acquired assets in foreign currencies to offset their long dollar positions, hence their use of forex trading activities was mainly as a hedging tool and these activities had an insignificant relationship to the value of the firms they researched on. However several contradictory studies on the impact of forex trading on firms have emerged, Smith and Stulz (1985), Allayannis and Weston (2001), Bartram et al (2011) all found that there was a direct correlation between use of derivatives and forex trading on the firm's value hence indicating that forex trading created arbitrage opportunities which led to value addition to the firm.

Several empirical studies have been done locally across various industries on the impact on forex trading on the financial performance of the entities. Gitogo (2012) indicated an existing relationship between the commercial banks financial performance and financial derivatives. The study focused only on a time frame of 1 year. Nasurutia (2013) conducted an empirical research on the financial derivatives effectiveness on commercial banks and concluded that the relationship between derivative usage and foreign exchange exposure was significant and the relationship was inversely correlated in that change in a unit of derivative usage would significantly affect foreign exchange exposure decrease. Akun (2016) indicated that there was an insignificant correlation between financial derivatives and financial performance of banks. There search looked at the volume of derivatives by all banks and ROA as a cumulative of the industry data. My study intends to fill this gap by collecting data from each of the 37 active commercial banks which have been fully in operation for the period under study, while considering the translated foreign exchange income.

Studies conducted by Smith and Stulz (1985), Chamberlain et al (1995),Allayannis and Weston(2001),Jin and Jorion (2006), and Bartram et al (2011) have been conducted in the developed countries and have majorly concentrated on non-financial firms.

Local studies conducted in Kenya by Gitogo (2012), Nasurutia (2013) and Akun (2016) were done pre interest rate cap and have been limited to non-financial firms and the ones conducted on banks have been on short periods and concentrated on the volume of derivatives and ROA as a

cumulative of the industry data instead of translated foreign exchange profits and the individual ROA of respective commercial banks. This study aims at filling these gaps by collecting data from each of the 37 active commercial banks which have been fully in operation for the period under study, while considering their individual banks ROA and translated foreign exchange trading income over a five year period between the years 2013 to 2017. The aim of this study is to answer the question: Is forex trading significantly related to financial performance of commercial banks in Kenya?

1.3 Research Objective

The study sought to determine the effect of forex trading on the financial performance of commercial banks in Kenya.

1.4 Value of the Study

The study is of help to Commercial Banks' policymakers who seek to have a clear understanding on how forex trading affects financial performance of commercial banks and facilitate optimal economic capital allocation to the areas that spur growth and deliver greater returns to their shareholders.

The aim of the research was to add on to contribute to scholar's knowledge on currency trading relationship and financial performance of banks in Kenya and to investigate if past findings would still hold on this topic while using different variables of individual banks. Students in finance will also find the study useful to build on their existing knowledge and pave way for further research on foreign exchange investment decisions.

Finally, the study comes in handy to support the Government and CBK as regulators to understand the impact of currency fluctuation on banks and how it affects performance of the banks and also that of the economy since they are closely inter-related and the bank's performance has a direct effect on the employment levels, economic growth, and inflation due to its intermediate function.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Literature pertinent to the study of the topic in question is discussed in this chapter. The primary topics that was reviewed include; theoretical review, empirical review, local studies and literature synopsis.

2.2 Theoretical Review

The following theories are relevant in forex trading and financial performance and which economists use to explain and even predict exchange rates. These are the Purchasing Power Parity (PPP) theory; the Interest Rate Parity (IRP) theory; and the International Fisher Effect (IFE) theory.

2.2.1 Purchasing Power Parity (PPP)

This is a theory in economics, propounded by Cassel (1918), suggesting that the level of prices between two countries, after adjustment of rate of exchange, ought to be comparable to one another. This theory is based on the one price rule that proposes the price of a particular commodity ought to be identical globally, when that price is expressed in the same currency. This means, in a case where there is a significant price disparity amid two countries for a similar commodity after modification of the rate of exchange; an arbitration opportunity arises since that commodity could be acquired from the country which offers it at a lower price. Lawrence (1992) indicated that PPP is a system employed to ascertain the comparative value of currencies by assessing the measure of modification required on the rate of exchange between countries so that the exchange is proportional to (or the same level with) the purchasing power of the respective currencies. Using this theory, an implied foreign exchange rate can be computed, providing a solution to the problem of determining the amount of money required to purchase similar commodities in different countries.

According to this theory, the rate of exchange between two countries is contingent on the comparative purchasing power of their corresponding currencies and the rate will equate the two purchasing powers. For instance, if a particular collection of commodities can be had for £1 in Britain and the same collection with Kes. 80 in Kenya, then the purchasing power of £1 in

Britain is equivalent to the purchasing power of Kes.80 in Kenya. Thus the rate of exchange, according to purchasing power parity theory, will be £1=Kes 80. Suppose in the U.S. \$1 purchases a given collection of commodities. In India, the same collection of commodities cost 50 rupees. Therefore, the rate of exchange will tend to be \$1 = 50 rupees. Now presume the price levels in the two countries remain constant but by some means the exchange rate moves to \$1=51 rupees. This denotes that \$1 can buy commodities worth more than the rupees. It will cost people to convert dollars into rupees at this rate, (\$1=Rs. 51), Buying the collection of commodities in India for 50 rupees and sell them in the U.S. for one dollar again, earning a profit of 1 rupee per dollar worth of transactions.

This implicitly creates more demand for rupees in the US while the supply of the same will be less on the grounds that very few people would export commodities from US to India. With respect to the dollar, the rupee value will increase until it reaches \$1=50 rupees. Consequently, the imports from India will not yield abnormal profits. The purchasing power parity between the two countries will be \$1=50 rupees.

Therefore, though the value of one currency in relation to another at any particular time is derived by the market forces i.e. supply and demand, ultimately the comparative values of the currencies of the two countries, as specified by their corresponding purchasing powers over commodities and services, are used to ascertain the rate of exchange. This theory hence states that homogeneous goods should sell for the same price worldwide after adjusting for exchange rate. If this were not so, there would theoretically be a possibility for arbitrage by purchasing the item in the country where it is cheap and selling it in the country where it is expensive which would lead to speculation and abnormal profits would then be realized.

2.2.2 Interest Rate Parity (IRP)

The IRP theory is similar to the PPP theory and implies that there should be identical rates of interest between two different countries for two identical assets so that there are no arbitrage opportunities and the risk of the assets should also be similar. This theory plays a crucial part in Forex markets, linking spot exchange, foreign rates of exchange and interest.

The theory additionally elaborates that the magnitude of the forward premium or discount on a foreign currency should be equivalent to the interest rate differential between the nations being compared. This theory implies that for a foreign investment the calculated rate of return in domestic currency will be identical as if the investment was made in the local nation. When the interest rate in the domestic nation is less compared to the interest rates in a foreign nation, the foreign currency must trade at a forward discount so that any profit due to higher interest rates in the foreign country is eliminated (Chaboud and Jonathan, 2005). Arbitrage opportunity would exist for domestic investors if forward discount is not substantial to offset the advantage of higher interest rates in the foreign nation, or the foreign currency fails to trade at a forward discount. Domestic investors are able to profit through foreign market investment in the case where domestic interest rates surpass foreign interest rates. To counterbalance whatever profit of greater interest rates in domestic country and avert arbitrage opportunity, the foreign currency needs to trade at a forward premium. Nevertheless, if foreign currency fails to trade at a forward premium or if the forward premium is not substantial enough to counterbalance the interest rate gain of domestic country, there is an arbitrage opportunity and hence gain by foreign investors (Bruce, 2011). The IRP model has revealed minimal evidence of functioning in recent years. In numerous instances, having nothing to do with risk-less arbitrage, currency appreciation is frequently encountered in countries with greater interest rates as a result of greater demands and greater yields (Bruce, 2011).

The theory of interest rate parity helps in the evaluation of the connection between the spot rate and a currencies future rate. According to Interest Rate Parity, the differential between the interest rate of two differing currencies will have no arbitrage and will show in the quality or price cut for the foreign exchange rate on the foreign exchange.

This theory additionally emphasizes the fact that the spot and forward interest rate difference between countries is equivalent to the magnitude of the premium or discount of the forward price on the foreign currency being compared (Hull, 1998). Arbitrage is not possible if IRP theory holds.

2.2.3 International Fisher Effect (IFE)

American economist Irving Fisher proposed the International Fisher Effect (IFE), which is a no arbitrage theory. It proposes that depreciation tends to occur in foreign currencies that have

comparatively high interest rates since projected inflation rate is reflected by high nominal interest rates (Madura, 2010). The International Fisher effect is a good tool to predict short-run rate variations in spot exchange (Cumby and Obstfeld, 1981). IFE stipulates that a country's currency that has a reasonably greater interest rate tends to devalue compared to a country's currency with a relatively lesser interest rate. IFE also suggests that the interest rate differential between two nations will be identical to the degree of decline. It is founded on the examination that the level of local inflation rate is proximately connected to the level of real interest rate in an economy which is autonomous to the monetary policies of a government. Therefore, the lower the value of currency, the higher the inflation rate (Hill, 2004). For instance, where country P has an interest rate of 15% and country Z has 10%, country's currency should rise approximately 5% in comparison to country P's currency.

Following the IFE theory, higher interest rates brings forth a higher rate of inflation. The IFE additionally approximates the forthcoming exchange rates established by the relationship of the nominal interest rate. However, sudden and sharp declines that are periodically characteristic of many high yielding currencies make this a risky strategy and the yield pickup can quickly be offset by exchange rate losses. If the exchange of such a strategy is hedged using a forward contract to fix the rate for the re-exchange of the currencies, the yield benefit should disappear as forward contracts are priced to remove such an arbitrage opportunity.

There are several critiques to these theories in that they do not consider the occasional divergence between money market interest rates and price of forward contracts. Additionally, exchange rate can be affected by several other considerations such as speculation, capital movement and tariffs.

2.3 Factors Affecting Financial Performance of Commercial Banks

The complexity of banking institutions has soared in the recent past; however, the main performance drivers are still efficiency, earnings, leverage and risk taking. It is important for a bank to generate earnings; however, the composition and volatility of these earnings should be considered. The ability of a bank to precipitate earnings from a certain aggregate of asset and also generate gain from a particular income source is referred to as efficiency. Taking of risk is mirrored in the adjustments to income for the risks shouldered to create them (for instance cost of credit risk during the cycle).Leverage on the other hand is a double-edged sword in that it can

improve performance results in the up-trend but on the other hand a bank may also fail due to unexpected losses due to it (ECB, 2010).

CAMEL rating tool has been used by to measure financial performance by Central banks and Regulators across the globe to determine the financial soundness of banks (Nurazi and Evans, 2005).

2.3.1 Capital Adequacy

Capital adequacy is a major component of financial performance. Capital is considered as a safety net by depositors and hence the more capital a bank holds the larger its deposits. This is profitable to a bank in that it increases its resources which culminate to an increase in its returns and a bank can also get cheap deposits due to low risk perception (Dagon, 2013).A banks financial stability is determined by capital adequacy. According to Basel Committee Capital adequacy is determined by CAR expressed as a percentage of banks total capital to its total risk weighted assets and a minimum ratio of 8 percent has been set by the committee .CBK has set minimum capital adequacy ratio of 14.5%, for total capital to total risk weighted assets.

2.3.2 Asset Quality

A banks asset is its loan book and the size of a bank's loan book will determine its exposure to credit risk and ultimately, it's financial performance. The evaluation of a bank's asset will enable management to project the banks' earnings and ensure its financial stability (Whalen, 1994).A high non-performing asset book will increase impairment costs and loan provisions in banks which will affect the profits of a bank (Diamond and Rajan, 2001).

2.3.3 Management Quality

Managers have the responsibility of making sound decisions in a bank that will benefit the bank and have an effect on its profitability or financial performance. A manager needs to have good leadership skills, high integrity, have technical competence and have vast knowledge to set regulatory requirements. Quality control systems, organizational discipline and quality of the staff will impact management quality as well (Halling and Hayden, 2006).

2.3.4 Liquidity

Liquidity is a measurement of an entity's capacity to meet due commitments. Liquidity ratio is an indicator of the amount of liquid assets a firm has to pay back the short-term debt and excess

cash to undertake opportunities in investment on viable projects; and the firm's value is dependent on growth of future investment (Myers, 1986).

2.4 Empirical Studies

The proof acquired from empirical research on impact of forex trading on financial performance of entities is varied regardless of more widely available information on forex exchange (derivatives) usage. Modigliani and Miller (1958) suggested that because financial guidelines cannot change an entities value in the absence of market imperfection, it is not necessary for organizations to participate in hedging activities, including tactics that utilize derivatives. Jin and Jorion (2006) conducted a study on firm value and hedging and sampled producers of gas and oil in the US between 1998 and 2001. The study conveyed that generally no difference exists in entities values between hedged entities and non-hedged entities, though they verified that hedging decreases an entities price responsiveness to oil and gas prices. The study concentrated on gas and oil companies over a four year period.

Allayannis and Weston (2001) examined the link between using currency trading and firm value. They looked at the interconnection between the value of a firm and forex trading between 720 large firms for a 5 year period from 1990. The authors saw that compared to firms that did not use derivatives, firms that use derivatives have on average 4.87% greater value or "hedging premium". This study affirms a latter research done by Graham and Rogers(2002) who studied 3,232 firms in the U.S between 1994-1995 and they argued that forex trading and use of derivatives can increase debt capacity and interest tax deductions and also reduce the expected tax liability of a firm if the tax function is convex in nature . The conclusion of the study is that hedging is a value enhancing strategy in that it increases a firm's debt capacity, with increased tax benefits averaging 1.1 percent value of firm value and the reasons that firms hedged was due to expected financial distress costs and firm size. The study mainly concentrated on the tax effect on the use of derivatives among non-financial firms.

Adam and Fernando (2006) conducted a study on hedging ,speculation and firm value and they examined a section of mining firms dealing in gold in North American for a 1 year period from 1989. They found that derivatives produce positive cash flows and are extremely important statistically as well as economically, implying that derivative transactions means increased

equity value. Their results showed that the majority of the increased gain seemed to originate from continuous positive actualized risk premium i.e. positive gain between contracted forward and spot prices. The study concentrated on mining firms over 1 year and looked on its impact on return of equity.

Empirical studies conducted locally show a mixed reaction to the subject understudy across different industries. Gitogo (2012) indicated an existing relationship between the commercial banks financial performance and financial derivatives .The study focused only on a time frame of 1 year.

Nasurutia (2013) conducted an empirical research on the financial derivatives effectiveness on commercial banks and concluded that the relationship between use of derivatives and foreign exchange exposure was significant and the relationship was inversely correlated in that change in a unit of derivative usage would significantly affect foreign exchange exposure decrease.

Akun (2016) conducted a study on effect of financial derivatives on commercial banks and indicated that there was an insignificant correlation between financial derivatives and financial performance of banks. This study concentrated on the volume of derivatives by all banks and ROA as a cumulative of the industry data.

Empirical studies as indicated above have been conducted internationally and have majorly concentrated on non-financial firms. Local studies have also been limited to non-financial firms and the ones conducted on banks have been on short periods and concentrated on the volume of derivatives and ROA as a cumulative of the industry data. My study seeks to study the effect of forex trading on all 37 active commercial banks which have been fully in operation for the period under study, in Kenya for a period of 5 years between 2013 and 2017 while considering the individual banks ROA and translated foreign exchange trading income.

2.3.5 Size of the Bank

Previous studies vaguely gave the proof of whether size of the firm may raise operational efficiency. Nance, Smith and Smithson, (1993) outlined that management of risk in corporate could be positively related to size of the firms since economies of scale could appertain to

transaction as well as operational hedging costs. Derivatives are more probable to be used by larger firms to hedge than smaller companies, since the larger fixed start-up costs of hedging can be afforded by larger firms.

2.5 Summary of the Literature Review and Knowledge Gaps

Modigliani and Miller(1958) assumed that an entities value cannot be affected or value modified by financial policy in an instance where market imperfection is absent thus indicating that there is no lure to hedging which was supported by Jin and Jorion (2006) and Chamberlain et al (1995).However several authors have conducted empirically studies on some elements that can be seen as determinants and incentives intrinsic in the financial hedging decision making polices for example Smith and Stultz (1985), Allayannis and Weston (2001),Graham and Rodgers (2002),Adam and Fernando (2006) and locally Gitogo (2012),Nasurutia (2013) and Akun (2016).Consequent to previous research, it is clear that the link between forex trading or usage of derivatives and value of a firm is mixed thus making research on this topic worthy to investigate.

2.6 Conceptual Framework

Independent Variable

- 1. Spot Trading
- 2. Currency Forward swaps& Options

Dependent Variable

Financial Performance of Commercial Banks
Return on Asset (ROA)

Control Variables

- 3. Size of the firm
- 4. Liquidity
- 5. Capital Adequacy

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The overall system employed to conduct the research in this study has been discussed in this chapter. It encompasses research design, population, sampling, methods of collecting data in addition to analyzing the data.

3.2 Research Design

This is the organization of the collection of data as well as analysis of data conditions with the aim to combine significance to the purpose of the research with economy in research procedure and decisions regarding the research study.

Research design is helpful in structuring the research to reveal how all major components of the research study are inter-connected as well as aid in addressing the fundamental research questions. The research design may also be viewed as the framework that indicates the kind of data that is required for the research, the source of such information and method of its collection (Glass and Hopkins, 1984). This study used the descriptive research design to aid in achieving the study objectives.

3.3 Population and Sample

A population refers to a distinct or group of people, cluster of items or households, events, elements, and services, that are being studied (Yates et al, 2003). This definition guarantees a homogeneous population of interest. In Kenya as at 2018, there are 43 licensed commercial banks. Of the 43 banks, 3 are under statutory management or in receivership and 2 of the banks that is, May Fair bank and Dubai Islamic Bank were incorporated in 2017 and SBM Bank bought Chase Bank (which had ceased its operations between 2016- 2018) in 2018. The entire population of 37 active commercial banks was studied (excluding banks under statutory management, May Fair Bank, Dubai Islamic Bank and SBM bank) and their data analyzed for the period between the years 2013 to 2017.

3.4 Data Collection

For this study, secondary data was used. Secondary data (Total assets, net trading income, total non-interest income, Profit/(loss) before tax and exceptional items, notional value of Forwards, swaps and options,) was collected from annual reports submitted to the CBK by the banks from each of the banks respective website. Annual reports of the banks were analyzed for the period between 2013 and 2017, which was the study period. All the banks under study have been continually in business between 2013 and 2017 and were included to ensure that the sampling frame is current and complete.

3.5 Data Analysis

Both quantitative and qualitative methods of data analysis were utilized for this study due to their complimentary qualities. Quantitative data analysis includes descriptive statistics. Measures of central tendency, descriptive data analysis will be done which comprise means and standard deviations. Qualitative data analyzes by identifying, examining and interpreting of themes and patterns in the textual data and hence discovering how these patterns and themes help in answering the research question. To present the information, frequency tables, charts, graphs, words and figures will be used. Data analysis was done using SPSS.

3.5.1 Conceptual Model

Financial performance= f(Y = f (x1, x2, x3)

Where X1= Spot Trading, X2=Forwards, swaps and options, X3=Control variables

NB: - The financial performance is the dependent variable whereas the foreign exchange trading is the independent variable. Foreign exchange trading is defined by Spots, Swaps, and Forwards which are independent variables and control variables are firm size, leverage, liquidity and return on equity. Financial performance is described by ROA.

3.5.2 Analytical Model

Analytical model was derived from the conceptual model depicted in equation (i) below:

$$(i) \quad ROA = \alpha + \beta_1 X_1 + \beta_2 \log X_2 + \beta_3 \log X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Whereby:

ROA = EBIT/Total Assets

α = Regression constant

$\beta_1 - \beta_6$ = regression coefficients

X_1 = spot trading (Net trading Income/Non –Interest income)

X_2 = currency forwards, swaps and options traded. (Log of Notional value of the derivative contracts)

X_3 = firm size (Log of Total Assets)

X_4 = liquidity (High Quality liquid asset/Short term Liabilities)

X_5 = capital adequacy (Total capital/Total risk weighted asset)

ε = term of error

3.5.3 Diagnostic test

The study conducted a multicollinearity test to determine if 2 or more independent variables in the model are highly correlated. The tolerance and variance inflation factor (VIF) values for the predictors were used as a check for multicollinearity. Tolerance indicates the percent of variance in the predictor variable that cannot be accounted for by the other predictor variable, while VIF is the inverse of tolerance.

3.5.4 Test of Significance

To quantify strength of linear relationship, correlation coefficient was used. The correlation coefficient value ranges between +1 and -1. A positive correlation suggests that the relationship between the independent variables and the dependent variable is positive while a negative correlation implies a negative relationship between the variables.

So as to examine the influence of explanation of the whole regression equation, coefficient of determination R^2 was used and it was also used to ascertain the level to which fluctuations in an independent variable X can be used to expound fluctuations in a dependent variable Y and also the usefulness in a regression model.

ANOVA techniques were used. For ANOVA, the invalid hypothesis is that no substantial variation exists amid the clusters. The substitute hypothesis presumes that among the clusters exists a minimum of one substantial variance. The associated probability and F -ratio value (p -value) was computed. Presuming that p -value related with the F is less than .05, then the invalid hypothesis is disallowed and the substitute hypothesis is reinforced. If the invalid hypothesis is

disallowed, a person deduces that there is no equality in the means of all the groups (Davidson and Sharma, 1994).

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter presents the findings and discussion from data collected from commercial banks through their quarterly reports and CBK. This is in line with the objectives of this study. The objective of this study was to determine the effect of forex trading on the financial performance of commercial banks in Kenya 2013-2017. The data was analyzed using Statistical Package for Social Sciences computer software. Research findings were presented in tables.

4.2 Descriptive Statistics

Table 4.1: Descriptive statistics

4.2.1 Return on Assets

The cumulative return on assets earned by commercial banks in Kenya yearly between 2013-2017 was obtained from the banking sector survey reports issued by the Central bank of Kenya. Table 4.1 below shows the findings.

Table 4.1 Return on Assets

Year	2013	2014	2015	2016	2017
ROA (%)	1.57	2.36	3.00	1.75	1.75
Spot trading (%)	19.97	19.25	18.92	22.0	18.78
forwards, swaps and options (Ksh M)	22.5868	26.7049	33.6233	33.7200	33.930
firm size (M)	10.221550	10.3422	10.38837	10.38621	10.38621
Liquidity ratio	22.87	41.92	39.14	37.39	37.39
capital adequacy	44.605	21.61	20.77	22.01	22.01

Source: Research Findings (2018)

Commercial banks financial performance (ROA) over the period covered by the study was highest in the year 2015 during which the return on assets stood at 3.00% in the years. The lowest ROA recorded over the entire period was 1.57% in 2013. Spot trading (Net trading

Income/Non –Interest income) was highest in 2016 (22.0 %) and the decreased in 2017 (18.78%). Other years recorded highest value in 2013 (19.97%) it then declined in 2014 (19.25%) and further declined to (18.92%) in 2015 before recording an increase in 2016. Currency forwards, swaps and options traded value was highest in 2017 where the value stood at Ksh. 339,233,000 and lowest in 2013 where the value was Ksh. 225,868,000. Firm size (Log of Total Assets) was highest in 2015 (10.38837) and lowest in 2013 (10.221550) the value was constant in 2016 and 2017 recording a value of 10.38621 in both years. There was an increase in 2013 and 2014 from 10.221550 to 10.3422. The banking industry’s liquidity was satisfactory throughout the study period given that the liquidity ratio in all the years remained above the 20% minimum level required by the regulations. This further pointed to the stability of the sector. Liquidity was highest in 2014, during which the average liquidity ratio for the banking sector stood at 42%. This was followed by a decline to 39.14% in 2015 and a further decline to 37.39% in the year 2016 and 2017. This Liquidity ratio was lowest in the year 2013, as indicated by the figure which stood at 22.87%. Capital adequacy was highest in 2013 (44.61%) and lowest in 2015 (20.77), the was a great decline in 2014 from 44.61 to 21.61 the further to 20.77 in 2015, the value the remained constant in 2016 and 2017 (22.01).

4.3 Test for Multicollinearity

Multicollinearity tests were conducted so as to avoid including any conclusions which were incorrect about how the dependent variables and the predictor variables are related. Multicollinearity occurs where the independent variables are strongly correlated and hence results of regression analysis are as a result of the correlation on independent variables. The presence was indicated by the use of Variance Inflation Factor (VIF) and tolerance degree and the findings obtained are presented by Table 4.2.

Table 4.2: Test for Multicollinearity

Variable	Tolerance	VIF
Spot trading	0.479	1.357
forwards, swaps and options	0.777	1.553
firm size`	0.396	1.222
Liquidity ratio	0.410	1.384
capital adequacy	0.345	1.194

Source: Research Data, 2018

The findings as shown by Table 4.2 show that, Spot trading had a Tolerance value of 0.479 and a VIF value of 1.357, forwards, swaps and options had a Tolerance value of 0.777 and a VIF value of 1.553, firm size had a Tolerance value of 0.396 and a VIF value of 1.222, Liquidity ratio had a Tolerance value of 0.410 and a VIF value of 1.384 while capital adequacy had a Tolerance value of 0.345 and a VIF value of 1.194. This shows that there was no multicollinearity problem as all the study variables had tolerance of greater than 0.1 and VIF less than 10.

4.3 Inferential Statistics

4.3.1 Pearson Correlation Analysis

Correlation is a way to index the degree to which two or more variables are associated with or related to each other. The most widely used bi-variant correlation statistics is the Pearson product-movement coefficient, commonly called the Pearson correlation which was used in this study. Correlation coefficient between two variables ranges from +1 (i.e. perfect positive relationship) to -1 (i.e. perfect negative relationship).

Pearson correlation analysis was also conducted to show a linear relationship between the predictor variable and explanatory variables. It, thus, help in determining the strengths of association in the model, that is, which variable best explained the relationship between forex trading and financial performance of commercial banks in Kenya.

Table 4.3: Correlations table

	ROA	Spot Trading (%)	Forwards, Swaps And Options (Ksh M)	Firm Size	Liquidity Ratio (%)	Capital Adequacy	
ROA	Pearson Correlation Sig. (2-Tailed)	1					
Spot Trading	Pearson Correlation Sig. (2-Tailed)	.522*	1				
Forwards, Swaps And Options	Pearson Correlation Sig. (2-Tailed)	.618**	.540**	1			
Firm Size	Pearson Correlation Sig. (2-Tailed)	.672**	.512*	.589**	1		
Liquidity Ratio	Pearson Correlation Sig. (2-Tailed)	.598**	.540**	.572**	.689**	1	
Capital Adequacy	Pearson Correlation Sig. (2-Tailed)	.652**	.712*	.589**	.568**	.618**	1

Source: Research findings (2018)

Based on the finding from the table above, the study found a strong positive correlation between Spot Trading and financial performance of commercial banks in Kenya as shown by correlation factor of 0.522, this strong relationship was found to be statistically significant as the significant value was 0.002 which is less than 0.05, the study also found strong positive correlation between Forwards, Swaps And Options and financial performance of commercial banks in Kenya as shown by correlation factor of .618, this strong relationship was found to be statistically significant as the significant value was 0.011 which is less than 0.05. The study also found a strong positive correlation between Firm Size and financial performance of commercial banks in

Kenya as shown by correlation factor of 0.672 this strong relationship was found to be statistically significant as the significant value was 0.004 which is less than 0.05. Further the study found a strong positive relationship between Liquidity Ratio and financial performance of commercial banks in Kenya as shown by correlation factor of 0.598, this strong relationship was found to be statistically significant as the significant value was 0.001 which is less than 0.05. In addition the study found a strong positive relationship between Capital Adequacy and financial performance of commercial banks in Kenya as shown by correlation factor of 0.652, this strong relationship was found to be statistically significant as the significant value was 0.014 which is less than 0.05.

4.3.2 Model Summary

In this study, a multiple regression analysis was conducted to test the influence among predictor variables. The research used statistical package for social sciences (SPSS V 21.0) to code, enter and compute the measurements of the multiple regressions. The model summary is presented in the table below;

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.788a	0.686	0.569	2.603

Source: Research data, (2018)

The model summary on the relationship between foreign exchange trading and financial performance is presented in table 4.4 above. From the findings shown in the table above, there was a strong positive relationship between the study variables as shown by R 0.788 at 5% significance level. The adjusted R squared value is 0.569 and this shows that only 56.9% of financial performance is explained by forex trading. The remaining 43.1% is explained by other factors, the standard error term is 2.603.

4.3.3 ANOVA

Table 4.5: ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.78	4	2.445	5.652782	.003b
	Residual	525.2	38	13.82105		
	Total	534.98	42			

Source: Research findings (2018)

F critical = 2.98

From the ANOVA statics, the study established the regression model had a significance level of .003 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. On the F test the calculated value was greater than the critical value ($5.652782 > 2.98$) an indication that Spot trading, forwards, swaps and options, firm size, Liquidity ratio and capital adequacy all have a significant effects on financial performance of commercial banks in Kenya. The significance value was less than 0.05 indicating that the model was significant.

4.3.4 Coefficients

The following tables gives the coefficients which helps in establishing the regression line

Table 4.6: Table of Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
	(Constant)	0.438	0.1388	3.1571	0.001
	Spot trading (%)	0.4288	0.1141	3.7581	0.015
	forwards, swaps and options (Ksh M)	0.4489	0.129756	3.4596	0.010
1	firm size	0.4502	0.1241	3.6277	0.015
	Liquidity ratio (%)	0.4289	0.1397555	3.0689	0.011
	capital adequacy	0.4305	0.115634	3.7230	0.001

Source: Research findings (2018)

The established regression equation was

$$Y = 0.438 + 0.4288X_1 + 0.4489X_2 + 0.4288X_3 + 0.4289X_4 + 0.4305X_5$$

From the regression model obtained above, on average, commercial banks in Kenya will register ROA of 0.438 units if the independent variables were excluded in the estimation model. In addition, a unit change in Spot trading cause an increase in commercial banks performance by a factor of 0.4288, a unit change in forwards, swaps and options cause an increase in commercial banks performance by a factor of 0.4489, also a unit change in firm size cause an increase in commercial banks performance by a factor of 0.4502. Further a unit change in Liquidity ratio cause an increase in commercial banks performance by a factor of 0.4289 and a unit change in capital adequacy cause an increase in commercial banks performance by a factor of 0.4305. The analysis was undertaken at 5% significance level. The criteria for comparing whether the predictor variables were significant in the model was through comparing the obtained probability value and $\alpha=0.05$. If the probability value was less than α , then the predictor variable was significant otherwise it wasn't. In this study, all the predictor variables were significant in the model as their probability values were less than $\alpha=0.05$.

4.4 interpretation of the Findings

Based on the findings commercial banks financial performance (ROA) over the period covered by the study was highest in the year 2015 during which the return on assets stood at 3.00% in the years. The lowest ROA recorded over the entire period was 1.57% in 2013. Spot trading (Net trading Income/Non –Interest income) was highest in 2016 (22.0 %) and it decreased in 2017 (18.78%). Other years recorded highest value in 2013 (19.97%) it then declined in 2014 (19.25%) and further declined to (18.92%) in 2015 before recording an increase in 2016. Currency forwards, swaps and options traded value was highest in 2017 where the value stood at Ksh. 339,233,000 and lowest in 2013 where the value was Ksh. 225,868,000. Firm size (Log of Total Assets) was highest in 2015 (10.38837) and lowest in 2013 (10.221550) the value was constant in 2016 and 2017 recording a value of 10.38621 in both years. There was an increase in 2013 and 2014 from 10.221550 to 10.3422. The banking industry's liquidity was satisfactory throughout the study period given that the liquidity ratio in all the years remained above the 20% minimum level required by the regulations. This further pointed to the stability of the sector.

Liquidity was highest in 2014, during which the average liquidity ratio for the banking sector stood at 42%. This was followed by a decline to 39.14% in 2015 and a further decline to 37.39% in the year 2016 and 2017. This Liquidity ratio was lowest in the year 2013, as indicated by the figure which stood at 22.87%. Capital adequacy was highest in 2013 (44.61%) and lowest in 2015 (20.77), there was a great decline in 2014 from 44.61 to 21.61 the further to 20.77 in 2015, the value the remained constant in 2016 and 2017 (22.01).

From Multicollinearity tests there was no multicollinearity problem as all the study variables had tolerance of greater than 0.1 and VIF less than 10. The study found a strong positive correlation between Spot Trading and financial performance of commercial banks in Kenya as shown by correlation factor of 0.522, this strong relationship was found to be statistically significant as the significant value was 0.001 which is less than 0.05, the study also found strong positive correlation between Forwards, Swaps and Options and financial performance of commercial banks in Kenya as shown by correlation factor of .618, this strong relationship was found to be statistically significant as the significant value was 0.011 which is less than 0.05. The study also found a strong positive correlation between Firm Size and financial performance of commercial banks in Kenya as shown by correlation factor of 0.672 this strong relationship was found to be statistically significant as the significant value was 0.004 which is less than 0.05. Further, the study found a strong positive relationship between Liquidity Ratio and financial performance of commercial banks in Kenya as shown by correlation factor of 0.598, this strong relationship was found to be statistically significant as the significant value was 0.001 which is less than 0.05. In addition, the study found a strong positive relationship between Capital Adequacy and financial performance of commercial banks in Kenya as shown by correlation factor of 0.652, this strong relationship was found to be statistically significant as the significant value was 0.014 which is less than 0.05.

From the findings, there was a strong positive relationship between the study variables as shown by R 0.788 at 5% significance level. The adjusted R squared value in is 0.569 and thus shows that only 56.9% of financial performance is explained by forex trading. The remaining 43.1% is explained by other factors, the standard error term is 2.603.

From the ANOVA statics, the study established the regression model had a significance level of .003 which is an indication that the data was ideal for making a conclusion on the population

parameters as the value of significance (p-value) was less than 5%. On the F test, the calculated value was greater than the critical value ($5.652782 > 2.98$) an indication that Spot trading, forwards, swaps and options, firm size, Liquidity ratio and capital adequacy all have a significant effects on financial performance of commercial banks in Kenya. The significance value was less than 0.05 indicating that the model was significant. From the regression model obtained above, on average, commercial banks in Kenya will register ROA of 0.438 units if the independent variables were excluded in the estimation model. A unit increase in all variables led to increased bank performance.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the study findings, conclusion and recommendations. The objective of this study was to determine the effect of forex trading on the financial performance of commercial banks in Kenya 2013-2017. The study specifically investigated the effects of Spot trading, forwards, swaps and options, firm size, Liquidity ratio and capital adequacy on financial performance of commercial banks in Kenya. It was based on the following theories: Purchasing Power Parity (PPP) theory; the Interest Rate Parity (IRP) theory; and the International Fisher Effect (IFE) theory.

5.2 Summary of the Findings

The study sought to determine the effect of forex trading on the financial performance of commercial banks in Kenya 2013-2017. The data was analyzed using Statistical Package for Social Sciences computer software.

From the descriptive statistics, the study found that commercial banks financial performance (ROA) over the period covered by the study was highest in the year 2015 during which the return on assets stood at 3.00% in the years. The lowest ROA recorded over the entire period was 1.57% in 2013. Spot trading (Net trading Income/Non –Interest income) was highest in 2016 (22.0 %) and it decreased in 2017 (18.78%). Other years recorded highest value in 2013 (19.97%) it then declined in 2014 (19.25%) and further declined to (18.92%) in 2015 before recording an increase in 2016. Currency forwards, swaps and options traded value was highest in 2017 where the value stood at Ksh. 339,233,000 and lowest in 2013 where the value was Ksh. 225,868,000. Firm size (Log of Total Assets) was highest in 2015 (10.38837) and lowest in 2013 (10.221550) the value was constant in 2016 and 2017 recording a value of 10.38621 in both years. There was an increase in 2013 and 2014 from 10.221550 to 10.3422. The banking industry's liquidity was satisfactory throughout the study period given that the liquidity ratio in all the years remained above the 20% minimum level required by the regulations. This further pointed to the stability of the sector. Liquidity was highest in 2014, during which the average liquidity ratio for the banking sector stood at 42%. This was followed by a decline to 39.14% in

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From R model, there was a strong positive relationship between the study variables as shown by R 0.788 at 5% significance level. The adjusted R squared value in is 0.569 and thus shows that only 56.9% of financial performance is explained by forex trading. The remaining 43.1% is explained by other factors, the standard error term is 2.603.

ANOVA statics revealed that the regression model had a significance level of .003 which is an indication that the data was ideal for making a conclusion on the population parameters as the value of significance (p-value) was less than 5%. On the F test, the calculated value was greater than the critical value ($5.652782 > 2.98$) an indication that Spot trading, forwards, swaps and

options, firm size, Liquidity ratio and capital adequacy all have a significant effects on financial performance of commercial banks in Kenya. The significance value was less than 0.05 indicating that the model was significant. From the regression model obtained above, on average, commercial banks in Kenya will register ROA of 0.438 units if the independent variables were excluded in the estimation model. A unit increase in all variables led to increased bank performance.

5.3 Conclusions

The study established that the forex trading variables investigated by the study namely Spot trading, forwards, swaps and options, firm size, liquidity ratio and capital adequacy have been constantly changing throughout the study period. As such, both high and low rates have been experienced in the years. The study thus concludes that there is no stability in forex trading variables in Kenya which may be caused by numerous factors. This results in the banks having different performance at different times and periods.

The study also established that forex trading variables do have a significant and positive effect on the financial performance (ROA) of the banking industry. The study thus concludes that increased units in forex trading variables will favor how the banking sector performs and grows. The positive impact may be explained by the fact that many imports are paid by the locals using the dollar and, with the shilling weakening against the dollar, the banks are making an arbitrage profit (Nyandema and Langat, 2016). Hence, the study concludes that the banking sector is hugely affected by activities in the foreign exchange market primarily.

On the overall there exists a positive relationship between the dependent and independent variables. The study found out that the dependent variables namely; Spot trading, forwards, swaps and options, firm size, liquidity ratio and capital adequacy have a strong positive relationship with the financial performance. Specifically, they were established to account to up to 56.9% of the variations in the performance. The study thus concludes that the performance of the banking industry is highly influenced by the current currency exchange rates in the country. The study is in line with Otuori (2013) who found that the exchange rates are not constant due to a number of factors namely the trade terms and debt of the public.

The study agreed with Brown (2011) who sought to examine the relationship between foreign exchange rate and market performance for manufacturing companies. The study made use of a descriptive research design. In this study it was revealed that exchange rates had a positive influence on market performance.

5.4 Recommendations for Practice, Policy and Theory

The study recommends that the issues related to foreign exchange trading should always be taken into account to improve the banks foreign exchange transactions and hence performance. The study recommends that Forex trading among commercial banks should be continued and capital should be invested in projects that maximize returns. The governance structures need to be put in place so as to enhance returns on capital and assets and in turn maximize returns to the commercial banks.

The study also suggest that despite concerns that Forex trading among banks entail new market risks that need regulatory intervention, the profitability and generally performance of the banks has not changed so much. However, market risk does vary considerably across the banks. Therefore a better way of assessing the risks associated with Forex trading and how these risks affect the banking sector in general must be undertaken.

The evidence suggests that Forex trading does improve the performance of the banks in terms of their gross income. Policy makers should undertake to understand why Forex trading among commercial banks is not as robust in Kenya as compared to other developed countries and what should be done to improve capital investments to maximize returns.

5.5 Limitations of the Study

Research findings utilized secondary data, which had already been obtained and was in the public domain, unlike the primary data which is first-hand information. Possible errors in the process of measurement or /and recording may have been impounded into this research.

Another limitation of this study was the time engaged was very limited. Voluminous data required plenty of time to collate and check for quality. This is especially so because the required data was not available in one file and had to be collected from several different sources. The researcher however did proper time planning to ensure comprehensive data collection.

The study period chosen covered only 5 years, which may not be adequate for generalization of the findings to a longer time period. Further, there was marked variation in this same period in the banking industry resulting from differences in the regulatory regime from year to year, number of banking institutions, macroeconomic and competitive circumstances alongside others. These differences were not accounted for, and could thus serve to limit the assumption of homogeneity among all the years selected for the study.

5.6 Suggestions for Further Study

The study sought to determine the relationship between forex trading finance and performance commercial banks in Kenya. The researcher recommends that since the sector is still experiencing growth it becomes important for banks to put into consideration the risk exposures and thus research into new and innovative risk management techniques is required. In this regard therefore the researcher recommends that additional studies should be conducted on this area of study.

This study sought to determine the effect of Forex trading on the financial performance of commercial banks in Kenya. The researcher recommends a study on the implications of risk management practices on non-funded income of financial institutions.

The current study targeted all the commercial banks in Kenya; the researcher recommends a study on the effect of Forex trading on the financial performance of other financial institutions in Kenya. This would help compare the results.

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APPENDIX I: LIST OF COMMERCIAL BANKS as at 31st DEC 2017

S.No	NAME
1.	ABC Bank (Kenya)
2.	Bank of Africa
3.	Bank of Baroda
4.	Bank of India
5.	Barclays Bank Kenya
6.	CfC Stanbic Holdings
7.	Charter House Bank (under statutory Management)
8.	Citibank
9.	Commercial Bank of Africa
10.	Consolidated Bank of Kenya
11.	Cooperative Bank of Kenya
12.	Credit Bank
13.	Development Bank of Kenya
14.	Diamond Trust Bank
15.	Dubai Bank Kenya Ltd (under statutory management)
16.	Dubai Islamic Bank Kenya Ltd
17.	Ecobank Kenya
18.	Equatorial Commercial Bank
19.	Equity Bank
20.	Family Bank
21.	First Community Bank
22.	Guaranty Trust Bank Kenya
23.	Guardian Bank
24.	Gulf African Bank
25.	Habib Bank AG Zurich
26.	Housing Finance Company of Kenya
27.	I&M Bank
28.	Imperial Bank Kenya-(Under Statutory Management)
29.	Jamii Bora Bank
30.	Kenya Commercial Bank
31.	May Fair Bank
32.	Middle East Bank Kenya
33.	National Bank of Kenya
34.	NIC Bank
35.	Oriental Commercial Bank
36.	Paramount Universal Bank
37.	Prime Bank (Kenya)

38.	SBM Bank Kenya
39.	Sidian Bank
40.	Standard Chartered Kenya
41.	Trans National Bank Kenya
42.	United Bank for Africa
43.	Victoria Commercial Bank

Source: (CBK, 2017)