EFFECT OF INFLATION RATE ON PROFITABILITY OF COMMERCIAL BANKS IN KENYA

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DECLARATION

I declare that this is my original work and that it has not been presented to any university other than the University of Nairobi for examination.

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DEDICATION

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ABBREVIATIONS

ANOVA…….Analysis of Variance

CBK………..Central Bank of Kenya

CPI………….Consumer Price Index

EBIT………..Earnings Before Interest and Tax

GDP………...Gross Domestic Product

IMF…………International Monetary Fund

KES………... Kenya Shillings

KNBS……… Kenya National Bureau of Statistics

NSE…………Nairobi Securities Exchange

OLS………... Ordinary Least Squares

ROA……….. Return on Assets

ROCE……… Return on Capital Employed

ROD……….. Return on Deposits

ROI…………Return on Investment

SD…………..Standard Deviation

VIF………….Variance Inflation Factor

ABSTRACT

The banking industry in Kenya has been reshaped by many factors including the customer expectations, technology, regulatory requirements by the Central Bank of Kenya, demographics and operation of informal systems in the market. The major challenges that face the commercial banks are attributed to low returns on investment, increased competition from local and international banks, high consumer expectations and regulatory pressure. The last five years have been uncertain and challenging in the region with returns from the banking sector fluctuating. The capping of the interest rate brought about low business to the financial institutions since the rate cap subdued private investment owing to the fall in lending rates. The overall growth in credit was low in the year 2017 and this slow business environment was influenced by the general election in the country. Data was collected from 37 out of the 42 commercial banks licensed and operational in Kenya as at 31st December, 2017 and this had a response rate of 88.10%. The independent variables for the study was Inflation rate and the profitability as measured by Return on Assets (ROA) was the dependent variable. Secondary data was collected for the five year period between January 2013 and December 2017 on an annual basis. The study used a descriptive research design and regression analysis was used to focus on the correlation of the dependent and independent variables. The results showed an R-square value of 0.368 which means that 36.8% of the variations in Return on Assets (ROA) of commercial banks in Kenya are explained by leverage, liquidity, inflation and size of the firm while the balance of 63.2% of the variation in ROA is attributed to other factors that were not part of this research. The study also established that there was a low correlation on return on assets (R=0.607). The ANOVA model showed that the F statistic was significant at 5% level with a p=0.000. Therefore, it was clear that the model was fit to explain the relationship between the variables in the study. The study concludes that commercial banks in Kenya are realizing low profits, with some experiencing losses based on the leverage burden, low liquidity that were seen to be below average, market power and size of the firm that have been established to be below one tenth. Inflation rates in Kenya are constantly high compared to profitability and there exists a negative significant correlation between inflation and profitability of banks that gives insight to the low values of profits. The results show how banks are affected by high inflation rates and thus affecting their profits while some banks register losses as shown by the values of ROA. This study recommends that management and policy makers of commercial banks in Kenya should develop strategies to counter the effects of inflation to allow for sustained profits and ultimately attract investors while safeguarding from liquidation.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Inflation is a natural economic progression that has been occurring globally and therefore it is prudent to incorporate inflation into financial planning for any organization. Without considering inflation, profitability of a company is overstated when the cost of depreciation and stocks consumed during the year are based on their original cost and not the replacement cost (Slawson, 2015). Commercial banks are very profitable due to the fees charged for its services to individuals, businesses and other organizations as well as the interests they earn on assets and securities. Commercial banks are financial intermediaries, where investments and return on assets have heightened their profitability greatly over the recent past. However, the profitability of these commercial banks has been greatly affected by the inflation rate in the market through the fluctuation of the Consumer Price Index (Ball 2008). Boyd and Champ (2006) argued that the countries with small equity and banking markets are attributed to high inflation since the private sector credit ratio decreases in relation to the loan amount. These two variables in the banking sector have an inverse relationship. The study on profitability of commercial banks is important due to the role that they play in the economy. Banks provide credit facilities and banking services and by attaining a higher customer base, they increase their market share and this has an overall impact on their profitability.

The demand-pull and cost-push inflation theories seek to explain why inflation occurs, why its rate varies and explain the movements between the inflation rate and other variables like profitability (Gillman, 2013). The demand-pull and cost-push theories of inflation are based on price determination and this will ultimately affect the bank's profitability. The general prices are determined by market demand and supply of goods and services.

The shifts in the demand and supply cause the variations in the price levels (Slawson, 2015). The liquidity preference theory shows that money being the most liquid of all assets is distributed among the stakeholders. When the firm holds money, the fluctuations in the supply of the money shall have an impact on profits. Marginal productivity theory is a factor of the market prices for the production and a fall in the inflation rate leads to a rise in productivity, which eventually increases the profits (Comley, 2015).

Inflation has an inverse effect on banks' profitability since the rise in inflation increases total costs incurred by the company leading to a fall in the profits. Profits react to sales volumes that are influenced by the cost levels determined by trading companies and pricing policies. The uncertainty of inflation affects the price system, efficiency and resources available to the company and therefore, additional funds are sourced internally and externally to meet the rising costs (Hall, 1982). Frisch (1990) argued that the uncertainty of inflation distorts pricing levels and increases the business risks, which negatively affects profitability.

Commercial banks' profitability is affected by the market power measured by the ratio of outstanding loans to the country's credit, the size of the bank in terms of capital structure, the nature of business as it is exposed to risks and the set limit for capital adequacy. With an increase in profitability, commercial banks are able to advance more loans to their consumers and thus improving business opportunities in the economy. This research will concentrate on how profitability is affected by the rate of inflation in Kenyan commercial banks. This shall be determined by both the monetary and non-monetary theories of inflation.

1.1.1. Inflation Rate

Keynes (1930) stated that inflation occurs from a rise in the value of aggregate demand for goods and services beyond aggregate supply at full employment level. Frisch (1990) argued that inflation is an upsurge of weighted average price level as opposed to an upsurge in the

price of individual products. Hagger (1977) argued that there is no single definition for inflation. However, the most considerable definition was that inflation is the surplus demand for commodities in the market as a whole. This indicated that the level of expenditure being engaged on home produced commodities surpasses the maximum yield of the home produced commodities that are achievable in the long run, based on the available resources (Skene, 1992). Inflation refers to an overall rise in the Consumer Price Index, which is a weighted average of prices for different goods and services (Sinclair, 2010). Inflation rate occurs when the buying power of a currency falls due to a rise in the level of prices for goods and services in the economy (Comley, 2015).

Inflation increases production when the economy is functioning at capacity since there is additional spending and ultimately raising the demand for products and services. The interest expense on working capital is considerably increased and this encourages borrowing and lending in the economy (Goldschmidt, Shashua, & Hillman, 1986). Measurement of inflation can be affected by variations in the value of the commodities provided in the CPI. The utilization of goods and services in a population is dependent on the specific country since the index is based on a variety of commodities. Some commodities will display a variation on the price index and this is weighted based on the content of the consumers overall spending. Special offers that increase the shopping habits of consumers can also affect the CPI since there is a resultant change in the expenditure patterns of the consumers which influences the weighing of the index (Comley, 2015).

1.1.2. Profitability

Profitability is an efficiency measurement that determines the health of a firm based on revenue and profit. This is the capacity of a company or institution to generate profits, or the extent to which it is able to generate profits (Malinvaud, 1977).

Profitability is crucial in the determination of a company's going concern aspect, revenue recognition, overall health and its economic value. In the determination of whether to invest in a company or not, potential investors evaluate the company's profitability to establish resource utilization and management of its investment portfolio. This is the firm's ability to generate returns on investment from the business practices based on the resources available to the business (Whittington, 2006).

The internal important indicators of bank's profitability are its market power, size, nature of business, and capital adequacy. The market power enables banks to adjust spreads to changes in the market and therefore maintaining a higher competitive advantage. The growth in size of a bank is attributed to its asset base and deposits, which increases their overall performance. The nature of banking business is high risk and thus there is exposure to high volatility but due to advanced systems they have managed to accrue high profits. The capital adequacy of banks is when they are able to meet their demands when they fall due. This is regulated by the central bank, which limits the reserve to measure the banks liquidity (Demirgüç-Kunt & Huizinga, 1999).

Measurement of profitability in a company is dependent of the method of accounting adopted by the company in reporting profits. This could either be cash basis or accrual accounting. It is however noted that accrual method of accounting is the most commonly used method by businesses and thus this has an effect of the measurement of profitability for the company that is done through the analysis of the statement of financial position. The company's principal objective is maximization of shareholders wealth and this is determined by the return on investment attributable to them (Amandeep, 1993).

1.1.3. Inflation Rate and Profitability

Inflation has a major influence on the level of interest because it will decrease the buying power of the currency and lower real investment returns. The tendency of prices to rise in general and continuously for most of the goods and services is due to inflation (Brigham and Houston, 2010). Profitability ratios assist in analysing business performance, decision making relating to expansion/ diversification and investment decisions. Inflation has positive effects in the liabilities and negative effects on the asset side of the statement of financial position. To counter inflation, companies have to increase earnings at a rate higher than inflation to compensate for lower depreciation (Frisch, 1990).

Hall (1982) argued that depreciation during inflationary periods is lower than the cost of replacement and offers less tax shelter. To maintain the generation of cash flow, it is necessary to achieve rates of earnings growth above inflation by passing the full cost of inflation to customers. Financial markets liquidity, which might be present during inflationary periods, might not be enough to increase demand of shares and avoid poor stock market performance unless liquidity is also accompanied with a substantial appetite of investors for risk. The theoretical expected effect of inflation on profitability is that a rise in inflation results in a decrease in profitability.

1.1.4. Commercial Banks in Kenya

Commercial banks in Kenya are licenced by the Central Bank as per the act and regulations and these are meant to safeguard the overall soundness and stability of the financial system. The act restricts any individual or institution from transacting in any banking or financial business unless it is approved and any individual who contradicts this is guilty of an offence. The institutions are required to apply for licencing in writing to the Central Bank (CBK, 2017).

The Central Bank amended the banking act in 2016 by introduction of an interest rate capping on lending and deposit rates which has led to an increase in investment of Government securities, decline in profitability of banks, decline in capital for small banks and the conduct of the monetary policy has been adversely affected.

In Kenya, before any banking or financial business is transacted, the institution has to apply for a licence. The Central Bank has the power to withdraw the licence in writing to the institution if the said institution is liquidated, wound up, fails to comply with the act or terminates its business in Kenya.

The Central Bank prescribes the minimum ratio that ought to be maintained by the banks between their core and total capital as well as determine the classification method and the evaluation of the bank's assets.

Banks in Kenya are restricted by the banking act not to advance loans in excess of eighty per cent (80%) of deposits and deposit a minimum amount with the Central Bank of Kenya. The minimum capital requirement to start a bank in Kenya is KES 1 billion and the source of the capital should be provided to CBK (CBK, 2017). The banks have a mandatory minimum allotment of liquid assets as stated by CBK. Presently, the statutory minimum required to be maintained by the banks is twenty per cent (20%) of its liabilities and liquid assets.

Profitability has increased in the banking sector in Kenya due to the introduction of agency banking and the reduction in the response time to customer complaints. This has managed to ensure easy access to banking services in a wide area in the economy and within a short duration. Recently, the Central Bank has fined more than fifteen banks for improper practices and violations to the banking act, which has greatly affected their profits. These banks have ignored the interest rate capping to ensure maximization of their profits.

The rise in inflation has brought about an upsurge in the prices of commodities in Kenya despite the increased profitability by banks. The banking sector has experienced growth despite the increase in inflation rates and this was attributed to the increase in lending due to the interest rate capping.

1.2 Research Problem

Inflation has both positive and negative effects on the economy of a country. Positive effects include debt relief and mitigation of economic recessions while the negative effects include loss of value of money, uncertainty of investments and savings and shortages of goods in the market due to hoarding (Ball, 2008). The objective of this research is to analyse the rate of inflation and profitability in commercial banks and measure the effect that inflation has on the banks' profitability in the Kenyan economy. Investment decisions by commercial banks are influenced by the projection of profitability rate and since many economies have been influenced by the fluctuations of the inflation rate, their overall performance and output is generally affected. Therefore, inflation rate stability has an influence on a firm's financial performance.

Comley (2015) argues that inflation is a major variable affecting profitability based on short-term surges attributed to pricing of commodities causing a decline in living standards. Government policies control pricing levels by imposing taxation measures that directly affect inflation rates in the economy. However, Slawson (2015) suggested that in order to control inflation in the market, reduction of competitive advantage by monopolies that raise the prices of goods and services should be considered. To counter these effects, companies have been forced to increase their earnings to compensate for lower depreciation. In order to improve this, companies transfer the cost of inflation to the consumers so as to maintain cash flows (Gillman, 2013).

He also argued that inflation causes severe consequences on the economic value of the company's financial records, monetary value and going concern aspect and in turn affecting the profitability.

The study by Ball and Pitchford (1964) indicated that an increase in import prices would affect equilibrium and create excess supply in the economy therefore affecting the balance of payments leading to a drop in domestic prices and profit levels. Tan and Floros (2012) conducted a study on bank profitability and inflation: The case of China. The study indicated that inflation had a positive relationship to profitability as measured by ROA in the Chinese banking sector since revenues increased rapidly than costs incurred by anticipation of inflation rates and adjustment of interest rates accordingly.

Wamucii (2010) argued the relationship between inflation and financial performance of commercial banks in Kenya as measured by profits, assets and cash flows. The study indicated that the profits had increased as the inflation decreased which showed an inverse relationship between the variables. The limitation to three variables did not conclusively examine the other measures of financial performance that affect the relationship between inflation and profitability. The inflation rate in Kenya has been increasing and it has not been clearly established if this has had an effect on profitability of commercial banks. Okoth (2013) studied the effect of interest and inflation on exchange rates. He established that a great impact caused by a rise in inflation and interest on the exchange rate but did not show how inflation rate affected the profitability despite having an effect on the exchange rate, currency values and revenues from foreign exchange trading. This showed that studies in the Kenyan context have failed to clearly show how commercial bank's profitability is affected by inflation rate in the market and what impact it shall have on the investors' goal of wealth maximization.

Therefore, the investors, financial analysts, members of the public who bank with commercial banks and potential investors in Kenya will understand the effect that inflation rate has on the profitability of the banks as well as for investment decisions. The research is meant to ascertain the impact of inflation on banks profitability and how the outcome affects the investment and lending decisions in Kenya since the subject has received very little attention in developing economies. The study intends to answer the following the research question; what is the effect of inflation on the profitability of commercial banks in Kenya?

1.3 Research Objective

To establish the effect of inflation rate on the profitability of commercial banks in Kenya.

1.4 Value of the Study

The study may be of benefit to the Central Bank, commercial banks, shareholders, stockholders, stockbrokers, investors and any other users on inflation rate and profitability in the Kenyan financial market. This information, recommendations and conclusions will assist the stakeholders to make better-informed investment decisions when considering investments in commercial banks in Kenya.

The Central Bank may benefit in the forecasting of inflationary rates in the country, their impact on the profitability of banks and the impact on the financial market. Commercial banks may understand the inflationary effects on their profitability through comprehensive forecasting.

Investors may benefit by projecting the comparison of the inflation rate and profitability since lower lending rates reduce the borrowing costs and this will encourage the purchase of more commodities and businesses to invest in order to improve output and profitability. The researchers will get more information on the relationship between inflation and profitability in the context of commercial banks in Kenya.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the applied theoretical framework applied in the execution of the study and reviews the previous studies done on inflation and the firm's profitability. It contains the theoretical review, determinants of profitability of commercial banks, empirical studies, conceptual framework and summary of literature review.

2.2 Theoretical Review

This is an evaluation of significant inflation and profitability theories and their relationship to commercial banks. The theories covered are; Demand-Pull inflation theory, Cost-Push inflation theory, Liquidity Preference theory and Marginal Productivity theory.

2.2.1. Demand-Pull Inflation Theory

The demand-pull theory was argued by Keynes (1930) and highlighted the causative function of monetary changes and non-monetary impulses respectively. The quantity theory digressed in its dynamic setting, which endorsed a steady inflation to a constant ascending change in demand fueled by a constant monetary addition. The Keynesian inflation model could explain an increase in the price level as initiated by fiscal or other non-monetary aspects (Gordon, 1974). Keynes (1930) showed that the price index would move upwards continuously by formulating a model for the inflationary process. In addition, inflation occurs when the volume of output is fundamentally permanent in the short run. The growth in productivity value index is attributed to the aggregate spending in the market. The growth in income will lead to a growth in spending since there will be an increase in demand in the economy.

Slawson (2015), this inflation theory is sound and it is the type of inflation that describes what occurs in the world economy. This theory explains that when the demand in the whole economy is increasing in a rapid intensity, the producers in the whole economy cannot increase the supply of commodities fast enough to meet the demand. Therefore, people end up bidding against each other to obtain the scarce goods leading to a rise in prices. The profit maximization principle states that values are usually near their profit maximizing levels at all times subsequently the capacity utilization is high enough, marginal costs will generally increase.

This leads to growth of aggregate demand for goods and result in inflation in the country. The Keynesian inflation model is created by changes in the monetary policies or spending tendencies by private investors. Demand-pull inflation increases the economic growth of the firm and therefore prices are increased leading to a rise in profits.

2.2.2. Cost-Push Inflation Theory

Cost-push inflation theory implied that it was originated by an income push from small trade unions facing an inelastic demand curve for labour thus profit push produced through administered pricing of income shared among a set of subgroups in the economy (Frisch, 1990). The theory of cost-push was defined by Sir James Steuart (1767) where he argued that price levels determined by competition and costs forces sellers to lower their prices since falling costs lower them. The decrease in output and employment was caused by a spontaneous rise in the costs and this could only be endorsed by changes in the economy that could preserve the yield level in the wealth stream that were improved adequately to the changes in demand (Gordon, 1974). A cost stimulated inflation is generated by independent growth in pay out or revenue demand. Cost-push inflation is triggered by a rise in money wages and a rise in price of other inputs such as raw materials and energy.

According to Hall (1982) cost-push inflation occurs when wages rise faster than the labour productivity. Trade unions demand and succeed in getting higher wages when there is no corresponding demand for labour and thus productivity fails to increase proportionately and therefore prices will rise. The inflation caused by trade unions under these circumstances is called the wage-push variant of cosh-push inflation. The cost-push inflation shows that firms may push costs to consumers and this reduction in costs leads to an increase in profits.

2.2.3. Liquidity Preference Theory

John Maynard Keynes developed the liquidity preference theory in 1936 describing that supply and demand for money were determinants of interest rate based on transactions, precautionary and speculative motives. This theory as described by Weintraub (1958) indicated that as quantity of money is distributed among participants in the economic process, each pool of money held reflects the demand for money and thus shows that money is the most liquid of all assets. The monetary theory with implications for interest, price and activity levels explains how and why individuals retain money as opposed to goods or interest bearing stock. The speculative motive explains how once money savings are accumulated, the immediate concern is how to spend it.

Weintraub (1958) argues that the best reason for holding money is the belief that bond prices will fall and this capital loss will surpass the interest return. Speculative demand for money is holding money as a medium of exchange that is dependent on the duration of incomes to the firm or individual holding the money. The price levels and outputs are simultaneous to the volume of cash required at any given time. Since the money held is affected by the fluctuations in the inflation rate in an economy, this fluctuation will also have an effect on the profits of a firm.

2.2.4. Marginal Productivity theory

Marginal productivity theory was advanced by T.H. Von Thunen in 1826 and contributed to a significant role in factor pricing. Weintraub (1958) argued that the theory could not be detached from the income theory of distribution. Marginal productivity theory is an element of prices related to all mediators and functional responsiveness of factors of their market prices. The own product approach explores two factors where labour is the variable and land is fixed in amount. In this approach, the marginal product of the factor diminishes then the further hire the factor must mean a fall in its real income. In relation to the analysis of inflation rate and productivity, the decrease in inflation results in a rise in the productivity. The yield tends to be equivalent to the societal value of the proprietors in precisely the similar sense in which the labour acquires its marginal net product from the proprietors. The marginal net product of an entrepreneur is the amount that the society is able to produce with his help over and above what it could produce.

2.3 Determinants of Profitability of Commercial Banks

The banks performance is determined by the yields on assets, equity and the net interest rate margins. The performance of commercial banks is based on several factors namely; market power, size of the firm, nature of the business and capital adequacy. Research has shown that economic and governing conditions directly impact the margins and profits. The influence of ownership by foreign banks and market concentration levels also impact profits and margins. The improvement of banking profits in African countries necessitates modern principles in the management of risks and operational efficiency (Flamini, Schumacher, & Mcdonald, 2009).

2.3.1. Market Power

Market power is the firms' ability to profitably change prices above the competitive level for a long period of time (Weisman, 2007). The determinant of commercial banks profitability based on the market concentration that is calculated by the proportion of each banks total unsettled credits and the net local credit of the country and the effect of administrative inefficiency. Commercial banks are intermediaries between CBK and firms or households in the diverse foreign exchange markets. The banks concentrate in markets where modifying the changes in response to adverse changes in the economy will ultimately have a higher competitive advantage thus giving the firm market power (Flamini et al., 2009). According to Cleassens and Leaven (2005), banks are generally competitive in the economy based on its size and the potential business opportunities. Establishing a new bank requires capital as well as a robust network of clientele so as to have a competitive edge in the market.

2.3.2. Size of the Firm

The magnitude of firms is determined by the capital structure and the percentage aggregate of nation's deposits. Through mergers, acquisitions and growth of large banking institutions, commercial banks tend to increase their profitability relative to their size (Flamini et al., 2009). Sanders (2008) argued that the growth of assets and deposits in any banking institution has a greater effect on its profitability. Small banks can offer more for the deposits so as to fund their asset growth and increase their overall performance. However, it is noted that several measures of a bank's performance in small banks have been higher in the long run than in large banks. Therefore, studies show that smaller banks have higher return on investment due to aspects such as community banking and lending to small businesses.

2.3.3. Nature of the Business

The nature of the business of commercial banks as described by Flamini et al. (2009) is a high risk and since there are different sources of income and this exposes the firms to credit risk and volatility. This is occasioned by the net interest revenues accrued from the interest earning activity of the banks. Commercial banks with relatively high non-interest earnings assets and low deposit funding are generally less profitable. Demirgüç-Kunt and Huizinga (1999) established a significant relationship between the businesses carried out by commercial banks to the profitability. The banks that have advanced to technological systems have been able to improve efficiency and therefore increase their customer base.

2.3.4. Capital Adequacy

Commercial banks capital adequacy is the demand for the reserves when and if they fall due. In Kenya, commercial banks require a minimum capital of 1billion dollars in capital to be licenced by CBK. This capital is the commercial banks reserve is the measure of the banks liquidity and customer deposits will add on to the capital structure of the bank (CBK, 2017). Liquidity management is necessary for any bank in the economy so as to safeguard the bank from the variation of the probability of borrowers default, operational costs, non-performing loans and inadequate returns on investments. The capital adequacy of any commercial bank is a determinant of its profitability because the firm can only generate profits if it remains liquid and in operation (Athanasoglou, Brissimis, & Delis, 2008).

2.4 Empirical Studies

The research shows diverse empirical studies in the global and local market that supports the relationship between inflation rate and profitability. However, it should be noted that these studies have produced mixed results depending on investment, consumption and demand for labour and commodities.

2.4.1 Global Studies

Bernanke, Laubach, Mishkin, and Posen (2001) carried out case studies in inflation targeting where central banks increase or reduce interest rates based on the targeted inflation levels to counter the effects. They focused on New Zealand as an inflation-targeting pioneer for the period between 1970 and 1990. New Zealand was the pioneer economy to adopt formal inflation that was a change in its conduct of monetary policies. The objective was to protect the country from adverse inflation effects that it experienced during the first oil shock between 1974 and 1988, which resulted in distortionary wage, price, dividend and interest rate freeze. In order to improve the prospects of monetary policy and track low inflation, and therefore reduce costs of disinflation. The study found out that with a drop in inflation rates, interest rates that were initially high fell rapidly leading to an increase in unemployment. It was concluded that with rising inflation and interest rates, the appreciation of exchange rates, there was sustained GDP growth and a fall in unemployment. The study did not explain the effect of output shocks since the focus was on price levels even though output has an impact on profitability.

The case study in Uruguay during the period between 1956 and 1987 by Giorgi (1991) focussed on the relationship between inflation and the regimes for external trade and monetary transactions. He compared the trade barriers and currency regulations in the country as well as the exchange rates. The causes of inflation in the country were monetarist, non-monetary factors and structuralist approach and therefore, his assumptions were deeply embedded in the economic structures of the region. Monetarists argued that when the money supply increases faster that demand there is an undesired increase in the cash balances held by the public and it generated excess demand for goods and prices rise. The non-monetary factors were noted to be immobility of factors of production, market segmentation and imbalances between supply and demand.

The structuralist approach based its argument on the income share approach where the result of the struggle between different social groups to preserve or increase the share of national income caused inflation. Giorgi (1991) concluded that inflation in Uruguay was contributed by the several models analysed and therefore he couldn't eliminate either the neoclassical oriented approaches or the structuralist approach. The study failed to show the significance of the effect that policies have on inflation in developing countries in relation to external debt and durability of the political regime.

The inflation in developing countries with a focus on Chile between 1950 and 1970 had the objective to review the existing explanations and empirical works on inflation in developing countries and focus the study on the behaviour of price level from an analytical point of view with the use of a macroeconomic model. The study was done in a price-controlled market and therefore in specifying the price equation, most prices were adjusted in the same season, usually at the beginning of the year. It was noted that a monopolist in the commodity market who faced fixed prices in the factor market would yields same results with a producer in the same market. If the prices determined were too high, the result would have been an excess capacity that would have to be marked down. The conclusion was that the high inflation rate and the price controls in the economy have hindered the existence of a capital market and therefore affected growth of the economy (Behrman, 1976). The study did not consider the influence of policy formulation on inflation and the ultimate rate of growth, which affect profitability.

Ball and Pitchford (1964) analysed the problems of policy in an open economy and its impact on inflation and profitability. The study focused on the consumption of exports, which was a small proportion of its total output and therefore the domestic demand wouldn't influence the price of the commodities. The study noted that domestically generated inflation would arise from the behaviour of domestic goods, prices and wages that were controllable by the monetary and fiscal policies.

The findings of the study indicated that a rise in import prices would affect equilibrium and thus creating excess supply. Therefore, the inflation rate would fall and affect the balance of payments in the economy leading to a fall in domestic prices and this had an impact on the profit levels.

The study on investment, consumption and inflation was meant to determine if there were stabilizing forces in the market apart from the intervention by the state and banking institutions, the possible impact on these investments, savings and returns. The study was carried out during the post war experience in Europe between 1948 and 1958 on the statistics for manpower in the region (Robertson & Wilson, 1961). The rise in working population increased investments in the industries and therefore taking advantage of the post war inflation with an increase in technological developments that induced acquisition of new capital. They concluded that the capital coefficient gives the relationship between increased output and the capital needed for production. The study did not show how with full utilization of capital and other factors, growth of the capital structure and profitability would be dependent on the growth of working capital and the reduction of inflation.

2.4.2 Local Studies

Wamucii (2010) analysed the ten (10) year relationship between inflation and the financial performance of commercial banks. The analysis of the data was done through regression of inflation against the commercial banks' economic performance for the period under analysis. The findings indicated that there was an inverse relationship between inflation and financial performance and therefore, he concluded that as inflation decreased, the profits for the same period increased. This study did not clearly identify the relationship between inflation rates and how they influence profitability since there are other factors such as the negative impact of inflation that discourages investment and saving influences growth and performance.

The study covered the period between 2000 and 2009 while this study will cover the period between 2013 and 2017. Different periods produce different results since inflation is calculated from the weighted average of selected price changes that are modified over time and therefore, the current period will provide the calculation of a more accurate inflation rate. Consequently, this period will give a conclusive comparison between inflation and profitability. In addition, there was a limitation to only three variables used, which were assets, profits and cash flows and this study will focus on more control variables to give an extensive comparison of this relationship.

The study on the effect of interest and inflation on exchange rates was done for the period between 2007 and 2012 by Okoth (2013). The analysis was meant to determine the significance levels based on the two variables and ascertain their correlation. The study established that a great impact caused by a rise in inflation and interest on the exchange rate. It indicated that there was a likelihood of increase of the exchange rate due to the corresponding increase of the two variables. The study did not show how inflation rate affected the profitability despite having an effect on the exchange rate, currency values and revenues from foreign exchange trading.

Vena (2012) analysed the impact of inflation on the yields of companies listed in Kenya. She observed that inflation was a major problem in Kenyan and with a rise in inflation there was a corresponding rise in the CPI due to the rising interest rates resulting to a fall in price of shares for the listed companies. Since the overall goal of a company is wealth maximization, with the fall in the share price there was a fall in the returns for the companies. The study was conducted between 1998 and 2013 and the researcher used the GARCH model that highlighted the effect of inflation on firms' yields. The findings indicated that inflation has an adverse effect on profitability and it was concluded that stock returns are low when there is high inflation since investments are moved from stock exchange into business ventures that are not influenced by

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inflation. The study did not show a clear effect of inflation on the stock market return and volatility, which ultimately influence the profitability of the firms.

Wanjohi (2003) examined internal and external factors of commercial banks' profits in Kenya. The study was done to determine why some commercial banks are more successful than others since profitability was one of the measures of a firm's success. Inflation was also noted as a determinant of profitability since it affects the costs and revenues of the business. Inflation was associated with higher realized interest margin and profitability since there was a positive connection between inflation and profits. The period analysed was between 1993 and 2002 for banks listed in the NSE. Regression was conducted and thus findings indicated that despite the banks being different in characteristics and experience it was evident that the internal factors contributed to the profitability and this was mainly from interest on loans and this was due to the fact that loans formed the major part of the banks' capital structure. The study was only limited to listed banks in Kenya and therefore all banks were not considered. The study did not extensively show how inflation affected profitability since the focus was on the loan component as an internal factor.

The influence of exchange rate on inflation rates since many countries experience this and it translates to high uncertainty in their economies. The study covered the period between 2003 and 2013 and used the Auto Regressive Integrated Moving Average model to describe the behaviour of the variables against each other. The conclusions indicated that there existed a weak connection between exchange rates and inflation since the variations in the model were small and therefore a moderate relationship of the variables (Mulwa, 2011). The study did not indicate how the relationship between the exchange rates and inflation rate affect the firms' profitability as an economic variable for performance.

2.5 Conceptual Framework

The model displays the relationship between the variables being analysed. The independent variable is inflation rate that is characterized by demand-pull inflation and cost-push inflation.

The variables will measure the profitability and how it is affected by the inflation rate in the economy. The control variables are liquidity, leverage, market power and size of the firm. Profitability is the dependent variable that is based on the ROA.

Figure 2.1: Conceptual Model

Independent Variable   **Dependent Variable**

```
┌─────────────────────┐              ┌──────────────────────────┐
│                     │              │  Profitability           │
│  Inflation Rate     │─────────────▶│  R.O.A                   │
│                     │              │                          │
└─────────────────────┘              └──────────────────────────┘
                                                  ▲
┌─────────────────────┐                           │
│  Control Variable   │                           │
│    ▪ Liquidity      │                           │
│    ▪ Leverage       │───────────────────────────┘
│    ▪ Market Power   │
│    ▪ Size of the Firm│
└─────────────────────┘
```
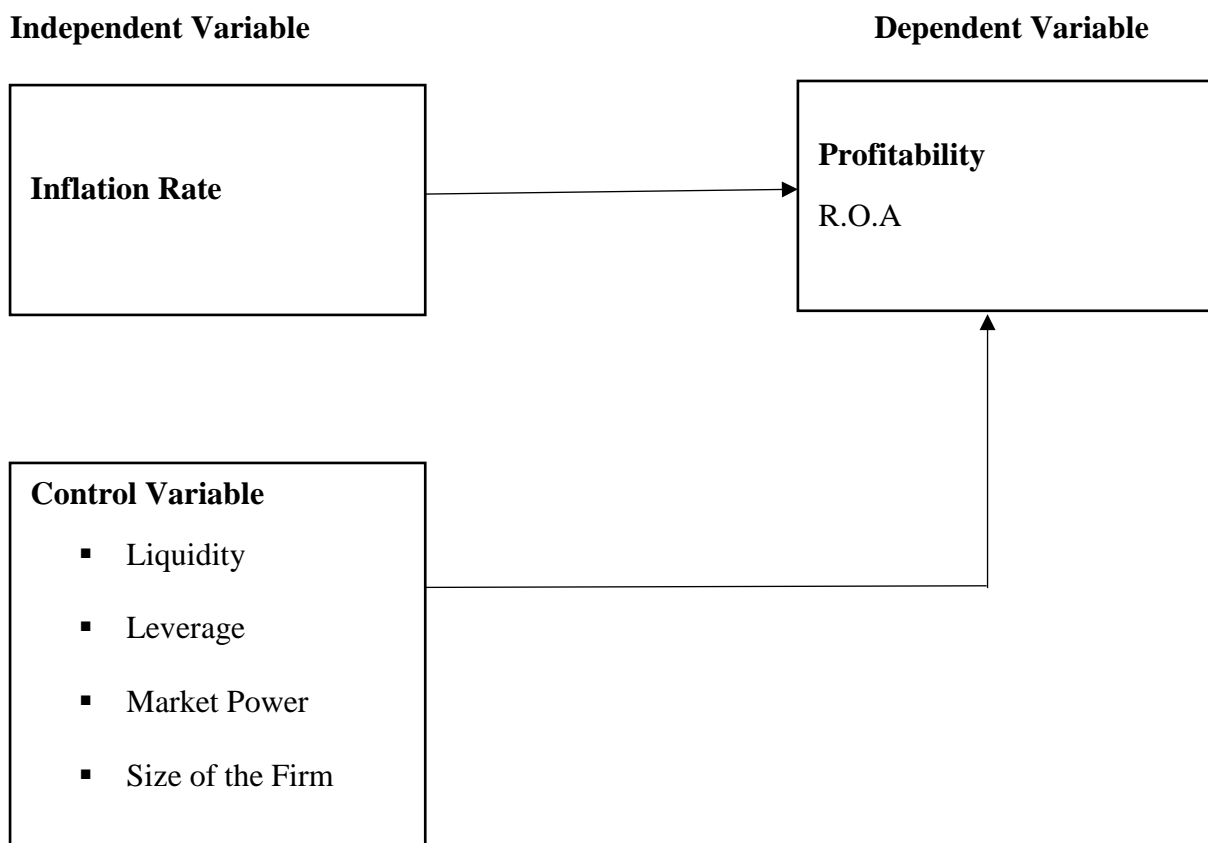
2.6 Summary of Literature Review

This section of this study explored the various theories advanced for inflation and profitability including the demand-pull inflation theory, cost push theory, marginal productivity theory and dynamic theory.

This chapter further describes the various determinants of profitability of commercial banks that included market power, size of the firm, nature of the business and capital adequacy. The chapter also detailed the empirical studies of the research done by scholars globally as well as research done in Kenya on and around the subject matter.

The researchers have shown a significant relationship between the impacts of inflation rate on profitability of commercial banks. Wamucii (2010) established that a negative effects of inflation discourage investment and saving in the country which leads to a reduction of returns on investments and the overall productivity of the country. The decrease in inflation rate resulted in an increase in profits.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter described the research methods applied to objectively determine the impact that inflation had on profitability of commercial banks. The methods included were research design, population, sample design, data collection instruments, data collection procedures, validity and reliability of the data and data analysis plan.

3.2 Research Design

The research design used was a descriptive study carried out as a survey of the forty two (42) licenced banks in Kenya as at 31st December 2017. The descriptive research was where large amount of data under the study was observed, recorded, described, analysed and classified using statistical calculations. Descriptive analysis comprised a detailed explanation of all the components of the population. This design was appropriate because the study involved an in-depth determination of the cause and effect relationship between inflation and profitability of Kenyan commercial banks and how the two variables related to each other.

3.3 Population and Sample

The population target of this study was the forty two (42) registered commercial banks in Kenya that were in operation as at 31st December 2017 as per appendix 1. This was a census study therefore there was no sampling.

3.4 Data Collection

Secondary data was obtained for the analysis and this information comprised statistics that were retrieved from the financial statements of the commercial banks for the duration between 1st January 2013 and 31st December 2017.

The commercial banks' data obtained from financial statements were Total Assets, EBIT, ROA and Shareholders Equity. The annual inflation rate was obtained from the KNBS reports and the reports by the Central bank. The data collected for liquidity was the level of debt, current assets and current liabilities, for leverage was debt and equity, for market power was the EBIT and revenues and for size of the firm was the capital, output and profits.

The data was collected from the financial statements of the commercial banks since they were reported on an annual basis and this was time saving and cost efficient. The data was extracted from the books of accounts.

3.5 Diagnostic Test

This research considered diagnostic tests such as linearity, autocorrelation, multicollinearity, homoscedasticity, normality and distribution tests to determine the validity and reliability of the data collection instrument. In the event that the diagnostic test fails, certain remedies shall be considered. Linearity test were fixed by adding a nonlinear function to the variables and if the data was positive, log the transformation. Autocorrelation and multicollinearity tests were fixed by considering the addition of lags to the dependent and independent variables and if there was a significant correlation add a second lag. Homoscedasticity tests were fixed by combining the logging to stabilize the variance in the case of inflation. Normality and distribution tests were fixed by comparing the error distribution with the same mean and variance to rectify the confidence intervals. The diagnostic tests were carried out to ascertain if the assumptions in the statistical models are correctly specified and to test whether the sample was consistent with the assumptions.

Linearity showed that two variables X and Y are related by a mathematical equation $Y=a+bX$ where (a) and (b) are constants. The linearity test was obtained through the scatterplot testing or F-statistic in ANOVA.

Normality test for the assumption that the residual of the response variable were normally distributed around the mean. Autocorrelation was the measurement of the similarity between a certain time series and a lagged value of the same time series over successive time intervals.

3.6 Data Analysis

Simple regression technique was used for analysing data. Regression analysis is a form of predictive modeling technique that investigates the relationship between a dependent (target) and independent variable (predictor). Regression analysis was used to focus on the correlation of the dependent and independent variables. Simple regression tries to determine whether variables forecast a given dependent variable on the data collected as tested for accuracy, uniformity, consistency and completeness.

The study applied the regression model below;

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon.$

    Where;

    Y = Profitability as determined by ROA

    α = Constant Term

    β_i = Beta Coefficient of variable i which measures the change Y to change in i

    X_1 = Inflation rate annual

    X_2 = Liquidity as measured by liquidity ratio

    X_3 = Leverage as measured by debt ratio

    X_4 = Market Power as measured by concentration ratio

    X_5 = Size of the Firm as measured by natural logarithm of total assets

    ε = Error term

Liquidity ratio is a measurement to examine the ability of a firm to pay off its short-term obligations when they fall due. Debt ratio is defined as the ratio of total debt to total assets.

Concentration ratio was the sum of the market share percentage held by the largest specified number of firms in an industry. The high degree of concentration indicates the level of market power held by firms and raises the concern of these firms charging high prices to consumers, limiting entry into the market and constraining output (Mulhearn & Vane, 2016).

3.7 Tests of Significance

In the test of significance, ANOVA was preferred in the study because it examined differences among the means of several different groups at once. The t-test determined the strength of the relationship between inflation rate and profitability as well as the significance of the independent and control variables. The correlation coefficient (R) was a measure of the linear relationship amongst the variables. The coefficient of determination (R square) measured the proportion of variability in a data set that is accounted for by the statistical model. Descriptive analysis summarized data for testing, testing hypotheses, events or situations and therefore allowed for the collection of a sizeable amount of information from a substantial population in an economic way within the variables. Therefore, this was believed to be the suitable approach to review the relationship between inflation rate and profitability.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION OF THE FINDINGS

4.1 Introduction

This chapter presents the data analysis, results and discussion of the findings. The chapter has been divided into four sections, 4.2 response rate, 4.3 data validity, 4.4 descriptive statistics, 4.5 correlation analysis, 4.6 regression analysis and hypothesis testing and finally 4.7 discussion of findings.

4.2 Response Rate

Table 4.1 below indicates the response rate of the study. The researcher was conducting a census study for a period of five years (2013 to 2017) for all registered and operational commercial banks in Kenya within that period, their financial statements were the source of data for the five years' period. Out of 42 registered banks by then, two were in receivership (Imperial and Chase bank) and three were only operational in 2017 (DIB bank, Mayfair bank and SBM bank) and therefore, they were found not to meet the inclusion criteria and were excluded and treated as non-response. The 37 banks' financial statement for five years was the target population resulting to 88.1% response rate as presented below.

Table 4.1: The Response Rate

Scale	Frequency (n)	Percent (%)
Response	185	88.1
Non response	25	11.9
Total	**210**	**100.0**

Source: Research findings (2018)

4.3 Data Validity

The data was subjected to some diagnostic tests procedures as discussed below to determine its validity.

4.3.1. Multicollinearity

Multicollinearity is a state of very high intercorrelations among the variables and exists when two or more of the predictors in a regression model are highly correlated. To examine for the presence of multicollinearity among the predictors, variance inflation factor (VIF) was used as shown in 4.2 below. If there exist no multicollinearity, the VIF factor will be between 1 and 10 and a VIF value greater than 10 is a sign of high correlation therefore there is multicollinearity. The two variables; market power and size of the firm were established to be highly correlated; VIF=271.8 and VIF=272.1 respectively and therefore there was a presence of multicollinearity. The researcher opted to exclude market power from the model and therefore the rest of the predictors had a VIF which was approximately 1.

Table 4.2: Multicollinearity Test

Collinearity Statistics						
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
Constant	-	-	-	-	-	-
Inflation Rate	0.994	1.006	0.994	1.006	0.994	1.006
Liquidity	0.996	1.004	0.997	1.003	0.997	1.003
Leverage	0.971	1.03	0.988	1.013	0.986	1.014
Market Power	0.004	271.832	0.994	1.007	-	-
Size of Firm	0.004	272.116	-	-	0.992	1.008

Collinearity Statistics		
	Tolerance	VIF
Constant	-	-
Inflation Rate	0.994	1.006
Liquidity	0.997	1.003
Leverage	0.986	1.014
Size of Firm	0.992	1.008

Source: Research findings (2018)

4.3.2. Homoscedasticity check

Homoscedasticity describes a random disturbance in the relationship between the independent and the dependent variable. The histogram in figure 4.1 below shows regression standardized residual against frequency to check for violation of the homoscedasticity check. In the figure, there is a clear relationship between the residuals and the predicted values suggesting that they are close to be normally distributed and it is likely that the homoscedasticity assumption has not been violated.

Figure 4.1: Histogram for Homoscedasticity Check
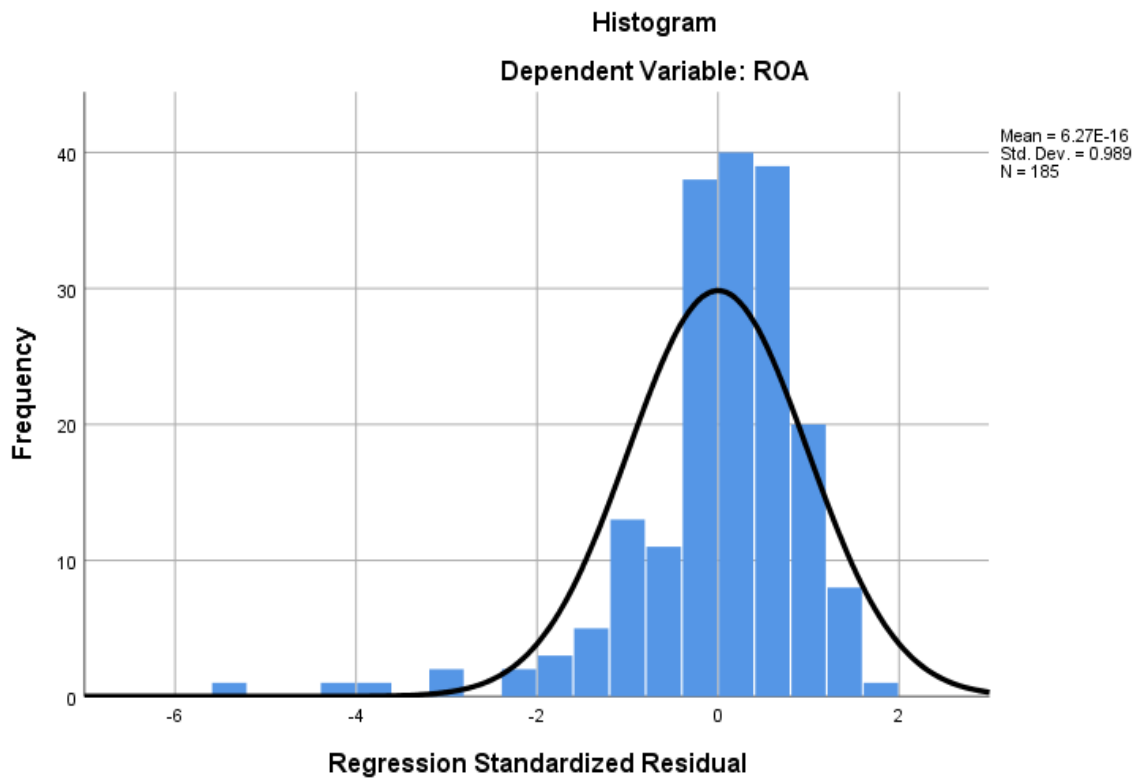
Source: Research findings (2018)

4.3.3. Normality check

The figure 4.2 below presents the examination for the violation of normality assumption. The plotted data points should always follow a straight line for normal data and if the researcher observes serious departures, it would suggest that normality assumption was violated.

In this data, we have no reason for concern since our data does not have serious departures from the straight line.

Figure 4.2: Normal P-P Plot for Normality Check

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: ROA
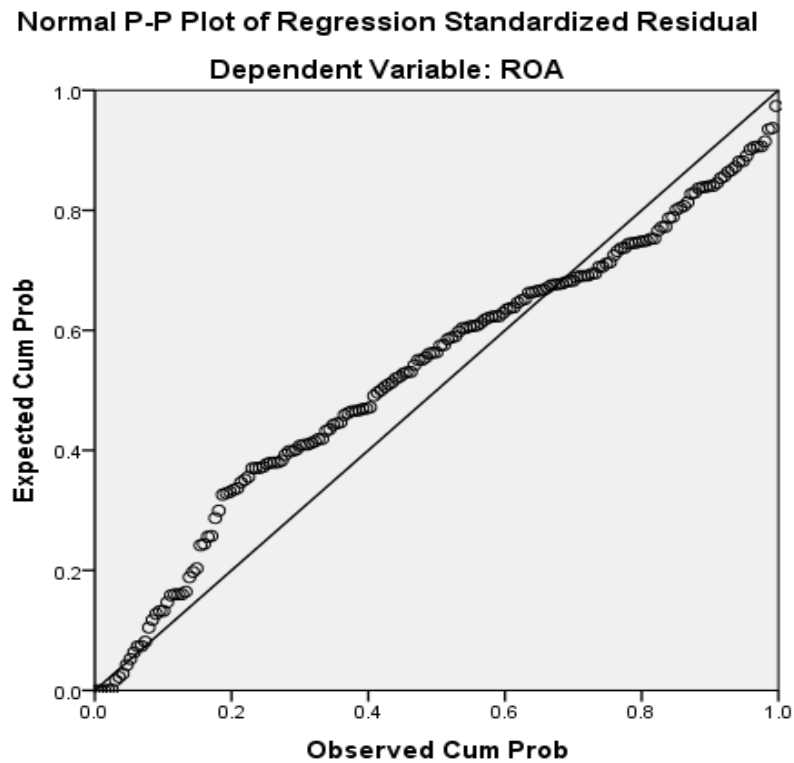
Source: Research findings (2018)

4.3.4. Checking for Autocorrelation

The Durbin Watson test statistic was used to examine for the existence of autocorrelation in the errors of a regression model as shown in table 4.3 below. This was important because presence of autocorrelation amongst the regression errors makes the least squares regression to underestimate the standard coefficients. When the value for Durbin Watson is closer to 2, then the assumption of independence of residuals is met. In the data, the value is 2.013 which informed us of the absence of autocorrelation.

Table 4.3: Durbin Watson Statistics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.607[a]	.368	.354	2.46511	2.013

Source: Research findings (2018)

4.3.5. Linearity Check

Figure 4.3 below presents scatter plots of explanatory variables used in the regression analysis. From each scatterplot, it was evident that there is a relationship between each predictor variable and the outcome variable (ROA) which can be modelled with a straight line. This is an implication of an existing linear relationship between the explanatory variables and outcome variables.

Figure 4.3: Scatter Plots Showing the Relationship between ROA and the Predictors
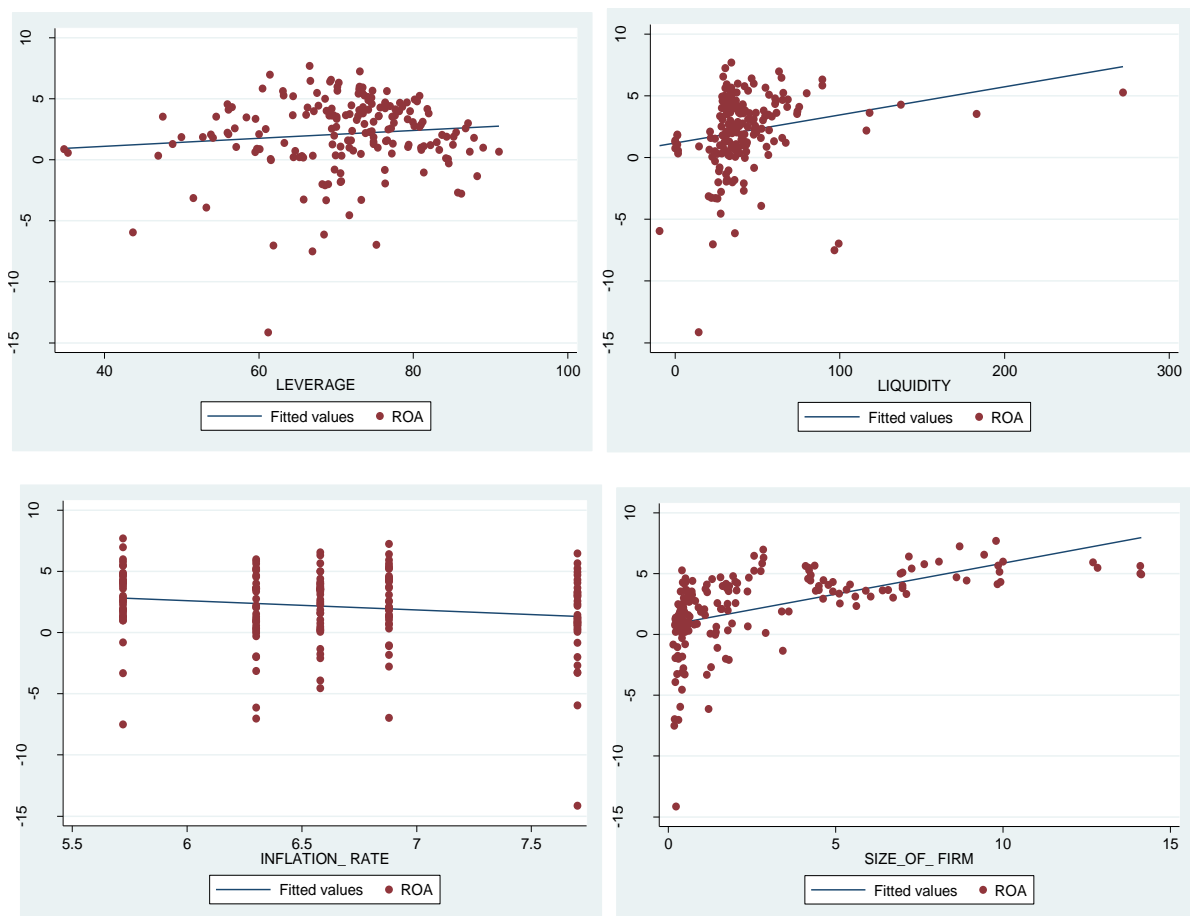
Source: Research findings (2018)

4.4 Descriptive Statistics

The summary statistics of the study variables are presented in table 4.4 below. The data was extracted from financial statement of 37 banks for the period 2013 to 2017. Inflation rate had a mean of 6.64% from 185 observations with a standard deviation of 0.66%. Profitability as determined by ROA had a mean of 2.1% from 185 observations with a standard deviation of 3.1%. Liquidity had a mean of 41.9% from 185 observations with a standard deviation of 28.3%. Leverage had a mean of 71.2% from 185 observations with a standard deviation of 10.0%. Finally, size of the firm had an average of 2.6% and standard deviation of 3.2% from the 185 observations.

Table 4.4: Summary statistics of study variables

	Mean	Std. Deviation	Minimum	Maximum	Kurtosis	Skewness
Inflation Rate	6.636	0.657	5.720	7.700	-0.818	0.296
Liquidity	41.851	28.387	-9.500	272.000	26.536	4.013
Size of Firm	2.627	3.220	0.140	14.140	2.399	1.696
Leverage	71.165	9.966	34.766	91.107	1.217	-0.853
ROA	2.128	3.067	-14.140	7.700	4.483	-1.509

Source: Research findings (2018)

Figure 4.4 below shows trend of inflation and profitability as determined by ROA from 2013 to 2017. It is evident that inflation rates were lower in 2013, then rose in 2014 followed by a steady decline in 2015 and 2016 before finally steeply rising in 2017. The values for inflation are higher than the profits made by banks. It is also worth mentioning that high values of inflation are related to lower values of profitability and lower values of inflation are related with high values of profitability. These assertion is clearly seen in the graph below during the rise and fall of inflation rates.

Figure 4.4: Trend of Mean Inflation Rate and ROA of Commercial Banks in Kenya

Line Graph Showing Trend of Mean Inflation Rate Versus ROA from 2013 to 2017
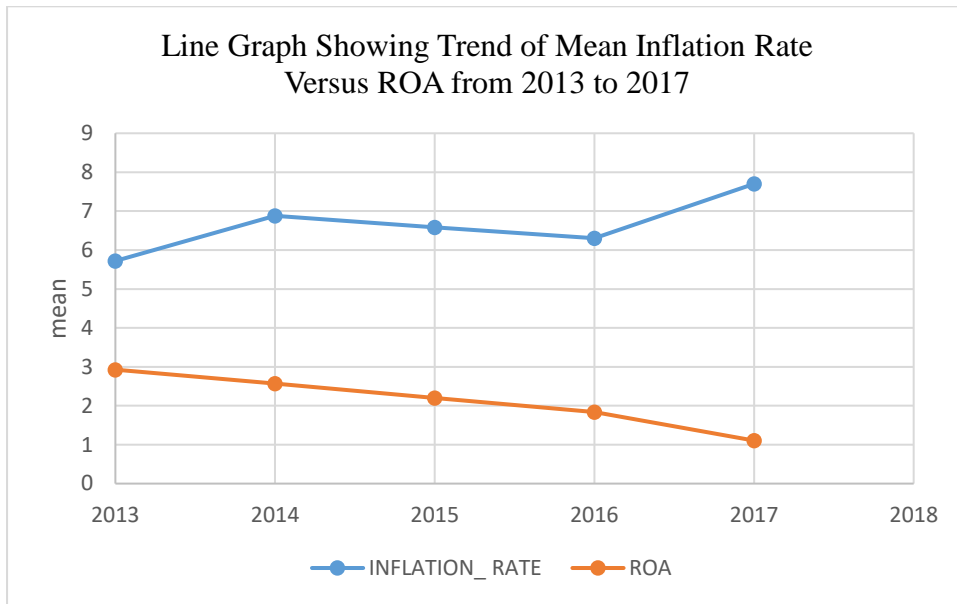
Source: Research findings (2018)

Figure 4.5 below shows how banks were seriously hit by high inflation rates despite all of them being subjected to the same inflation rate (6.6%) and thus some commercial banks register profits while others make losses. The findings show a substantial number of commercial banks between the five-year periods (2013 to 2017) made minimum profits. Equity bank had the highest mean profit of about 6.4% while Spire bank registered a mean loss of 5.5% during the same period.

Figure 4.5: Impact of Inflation Rate on ROA for Commercial Banks in Kenya

Clustered Bar Chart Showing Mean Distribution of Roa and Inflation Rates Amongst the Banks
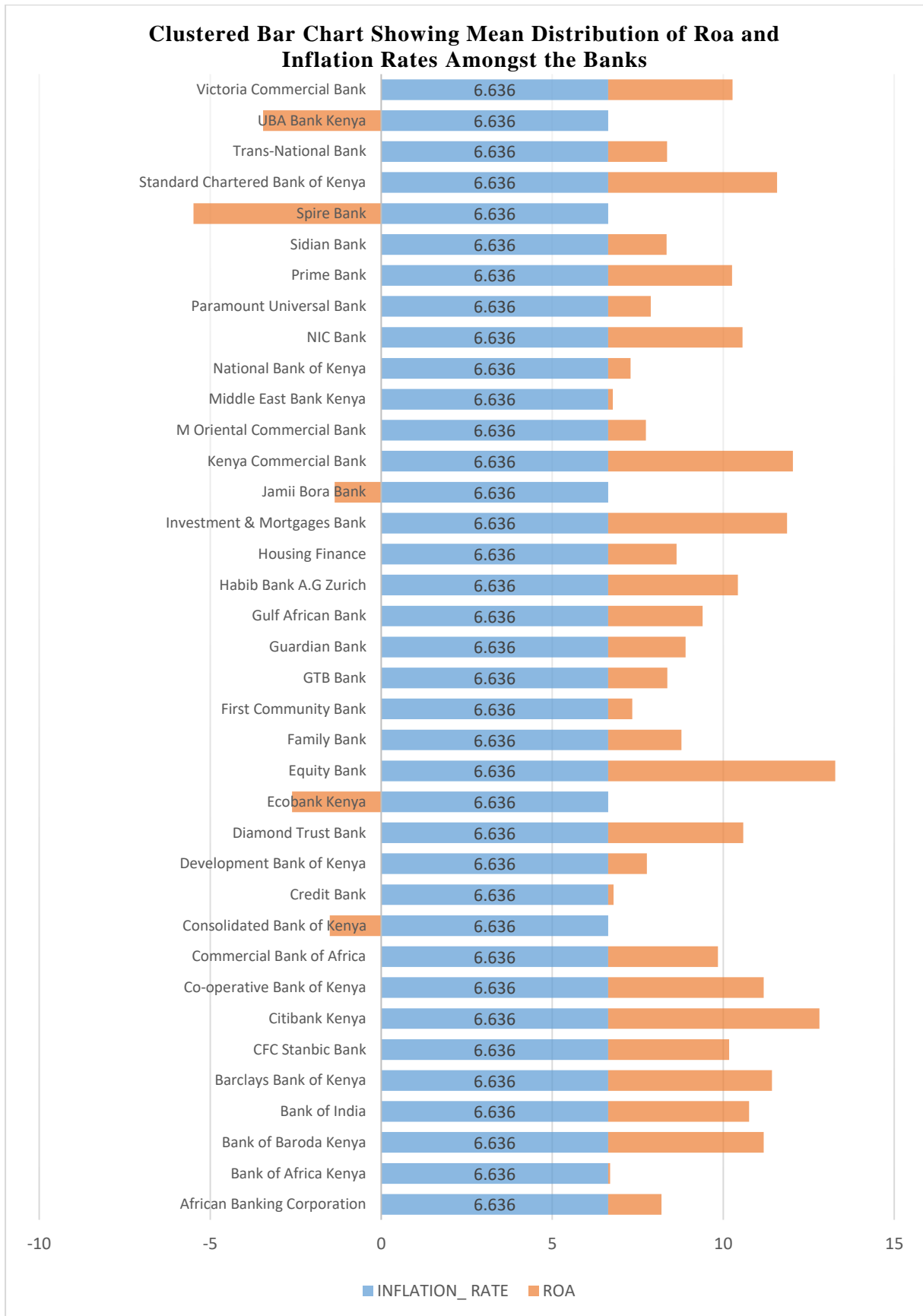
Source: Research findings (2018)

4.5 Correlation Analysis

Table 4.5 below presents the correlation matrix of outcome variable and the predictor variables. As presented by the matrix, ROA has a significant negative correlation with inflation rate ($r=-0.162$, $p<0.05$). ROA and liquidity were established to have a significant positive correlation ($r=.211$, $p<0.01$). Leverage was found to have no significant correlation with ROA ($r=.106$, $p>0.05$). Size of firm had significant positive correlation with the outcome variable (ROA); $r=.534$ and $p<0.001$.

Table 4.5: Correlations

		ROA	INFLATION RATE	LIQUIDITY	LEVERAGE	SIZE OF FIRM
ROA	Pearson Correlation	1	-.162	.211	.106	.534
	Sig. (2-tailed)		.028	.004	.150	.000
	N	185	185	185	185	185

Source: Research findings (2018)

4.6 Regression Analysis and Hypothesis Testing

A multiple regression model was used in order to identify the influence of inflation rate on commercial banks profitability as determined by ROA and also the contribution of control variables in the banks' profitability variance. The results are as shown below;

4.6.1. Model Summary

Table 4.6 below presents model summary. R squared explains the fraction of variance in ROA are described by the predictors (leverage, liquidity, inflation rate, and size of the firm). In this model, 36.8% of the observed variance in ROA is explained by leverage, liquidity, inflation rate and size of the firm. The regression analysis was undertaken at 5% significance level.

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.607[a]	.368	.354	2.46511	2.013

a. Predictors: (Constant), Size Of Firm , Inflation Rate, Liquidity, Leverage
b. Dependent Variable: ROA

Source: Research findings (2018)

4.6.2. Model Goodness of Fit

Analysis of variance (ANOVA) was used to determine whether the model significantly explained the deviations in the dependent variable (ROA) as presented in table 4.7 below. The table below confirms that the model significantly predicted the variation observed in ROA. This is based on the linear regression F-test which has the null hypothesis that the model explains zero variance in the dependent variable. But in this case F-test is highly significant, thus we can assume that the model explains a significant amount of the variation in ROA.

Table 4.7: Analysis of Variance

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	636.991	4	159.248	26.206	.000[b]
Residual	1093.822	180	6.077		
Total	1730.813	184			

Source: Research findings (2018)

4.6.3. Model Parameters

Table 4.8 below presents the findings of the regression coefficients. The results show a model of ROA as an outcome variable and leverage, liquidity, inflation rate, and size of the frim as predictors. Inflation rate has been established to have a statistically significant inverse relationship with ROA ($p<0.01$) both liquidity and size of the firm have been found to have statistically significant positive relationship with ROA ($P<0.001$).   One-unit increase in

inflation rate results to 0.790 units decrease in ROA for commercial banks in Kenya. While one-unit increase in liquidity and size of the firm results to 0.024 and 0.511 units increase in ROA respectively.

The model is therefore;

ROA=3.550 + 0.024 *liquidity* + 0.021 *leverage* + 0.511 *size of firm* -0.790 *inflation rate*.

Table 4.8: Regression Coefficients

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
1 (Constant)	3.550	2.195	1.617	.108
Inflation Rate	-.790	.277	-2.847	.005
Liquidity	.024	.006	3.763	.000
Leverage	.021	.018	1.121	.264
Size of Firm	.511	.057	9.024	.000

Source: Research findings (2018)

4.7   Discussion of Findings

The study established that there has been an inconsistency in profitability of commercial banks in Kenya. The ROA mean of 2.1% and SD of 3.1% shows how there have been great variation in different years for various banks. Some banks record losses as low as 14.1% while the best profitability ever realized from 2013 to 2017 by one of the banks was 7.7%. This is an indication of the extent at which banks are struggling to sustain themselves in the market due to high inflation rates in the country. An average inflation rate of 6.6% for a period of five years as found by this study is detrimental to profitability of the banks. Other variables like liquidity and leverage ratios were found to indicate that many commercial banks in Kenya are actually performing badly.

High leverage is associated with more debts by banks relative to its assets, which is the characteristics of most banks in Kenya as the study has established (mean of 71.2%; SD 10.0%) more than two thirds. Liquidity ratio of most banks has also been found to be below 50% (41.9%) an implication that many banks cannot be able to meet short term obligations.

Figure 4.1 and 4.2 presented the existing relationship between ROA and inflation rates experienced by commercial banks in Kenya. For periods of high inflation rates like in 2017, most banks realized losses. There has been an observed presence of an inverse relationship between the two variables. This can be attributed to minimum profits mixed with a series of losses experienced by commercial banks in Kenya. It was observed that despite the fact that all commercial banks are subjected to the same mean inflation rate (6.6%), some banks are realizing slightly significant mean profits while others are registering substantial mean losses of up to 5.5%.

The diagnostic tests for assumptions of OLS regression established a serious multicollinearity between market power and size of the firm, thus making the researcher drop market power from further analysis. In the correlation analysis matrix, there exist a negative statistically significant correlation between ROA and inflation rates (r=-0.162) which is an implication that higher values of inflation rates are associated with lower values of ROA. A finding which was observed in figure 4.1 showing trends of means of inflation rate versus ROA over the five year period. A statistically significant correlation was established between ROA and liquidity (r=0.211). Commercial banks with high liquidity are associated with high profits as they are able to meet their financial obligations without strain. Finally, a statistically significant positive correlation was found between ROA and size of the firm (r=0.534). Commercial banks with large sizes in terms of capital structure and the percentage aggregate of nation's deposits are associated with high profits.

In the regression analysis, the study has established that there exists a statistically significant inverse relation between ROA and inflation rate. One-unit increase in inflation rate decreases ROA by -0.790. This can be easily associated with low profitability observed in commercial banks due to high inflation rates observed in the country for the five period under study (mean of 6.6%). Wamucii (2010) studied the relationship between inflation and the financial performance of commercial banks for the period 2000 to 2009 in Kenya and established an inverse relationship. The findings are consistent with findings of this study which has been conducted for 37 commercial banks in Kenya for the period 2013 to 2017. Wanjohi (2003) also established inflation as a determinant of profitability since it affects the costs and revenues of the business. Significant positive relationship between ROA and size of the firm found by the regression analysis is in line with Sanders (2008) who argued that the growth of assets and deposits in any banking institution has a greater effect on its profitability. The capital adequacy of any commercial bank is a determinant of its profitability because the firm can only generate profits if it remains liquid and in operation (Athanasoglou, Brissimis, & Delis, 2008). This is consistent with the study findings indicating a positive relationship between ROA and liquidity of commercial banks in Kenya.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings, conclusions made from the study, recommendations, limitations of the study and suggestions for further research.

5.2 Summary of the Findings

This study was meant to find out the effect of inflation rate on the profitability of commercial banks in Kenya. The researcher employed a descriptive study design which was carried out from the thirty seven registered and licenced banks in Kenya that were in operation from 1st January 2013 to 31st December 2017. Secondary data was analysed using multiple regression with profitability determined with ROA being the outcome variable and inflation rate being the predictor variable while controlling for leverage, liquidity, market size and size of firm. The study established that most commercial banks have high leverage rates (mean of 71.2%) which is a sign of high debt burden on the commercial banks. The liquidity was found to be below average (mean of 41.9%) which is an implication of low spending and investment ability of most commercial banks. Stiff competition in the market has been evidently observed with low market power rates of commercial banks in Kenya (mean of 2.6%). These findings are attributable to mean high inflation rate (6.6%) observed in the study period. Most commercial banks are struggling to make profits with an observed 6.4% mean profit for the five-year period. Profit margin which is even less compared to average inflation rate for the same period.

Correlation matrix has shown the existing significant negative correlation between ROA and inflation rates. This is to imply that lower values of ROA are associated with high values of inflation rates.

This was also evident in the trend mean of inflation rate versus ROA of commercial banks in Kenya. It was established that as the inflation rate increases, ROA also decreases and with a constant mean inflation rate of 6.6% for this five-year period, commercial banks have been struggling with an average profitability of 2.1%. Positive significant correlation has been established for ROA and liquidity. High values of liquidity are associated with high values of ROA. In this study, many commercial banks had a liquidity rate of below 50% (41.9% on average), a fact that is directly associated with low ROA values of commercial banks in Kenya. The inadequacy of capital is greatly impacting on profitability of banks as their investment ability is limited and hence they cannot realize significant profits. Size of the firm has also been established to have a positive significant correlation with ROA. Large firm sizes are associated with high values of profitability. This is an area where commercial banks in Kenya are struggling a lot as evidenced by a mean of 2.6%. Thus, the attributable reason as to why there are minimum profits observed for commercial banks in the study period.

Regression analysis has found a significant inverse relationship between profitability of commercial banks and inflation rates. Every given time inflation rates increases with one unit, according to this study, profitability is expected to decrease with 0.79 units. With this type of relationship, it is difficult for commercial banks in Kenya to realize significant profits since the inflation rates are always high, hence the observed low profits. Statistically significant positive relationship between profitability of banks and inflation rates has been found by this study. One-unit increase in liquidity rate is expected to increase profitability by 0.024 units, but it has been observed in this study how liquidity rates for many commercial banks are low and this cannot have a significant impact on profitability and therefore, the low profits among the banks. Finally, this study has found out a significant positive relationship between profitability and size of the firm. For every one-unit increase in size of the firm, there is anticipated 0.511 increase in profitability of profitability of commercial banks.

However, the study has established that the size of firm of most commercial banks in Kenya is very small (2.6% on average) which cannot significantly influence profitability.

5.3 Conclusion

The study concludes that commercial banks in Kenya are realizing low profits, with some experiencing losses. The leverage burden among these commercial banks is high above two thirds. Liquidity rates are low below average, market power and size of the firm also have been established to be below one tenth. Inflation rates in Kenya are constantly high compared to profitability. There exists negative significant correlation between inflation and profitability of banks that gives insight to the low values of profits. The steady high inflation is associated with an equivalence constant low profits by the commercial banks. This has been further explained by a significant inverse relationship existing between profitability and inflation. With high inflation observed, profitability is equally witnessed to be low. Correlation analysis has shown an existing statistically significant positive correlation between liquidity and profitability of commercial banks. Regression analysis has also established a prevailing significant relationship between profitability and inflation. Since liquidity rates are observed to be low among the commercial banks, the positive significant correlation which is associated with high values of liquidity with high profitability is therefore not impactful and thus there are constant low profits. The size of the firm has been portrayed to be significantly having positive correlation between profitability and inflation, but since the values for the size of firm are low, they cannot influence the profitability of commercial banks. Hence low profits observed.

Despite this study being conducted on a different period to the one done by Wamucii in 2010 which analysed the ten year period (2000 to 2009) on the relationship between inflation and the financial performance of commercial banks, both finding have the same conclusion. They both indicate existence of inverse relationship between profitability and inflation rates, and thus concludes by stating that as inflation increased, profit for the same period decreased.

5.4 Recommendations

Based on observed consistent high inflation rate and its effect on commercial banks' profitability, the management and policy makers of commercial banks in Kenya should come up with better strategies of countering inflation effect to allow sustained profits and attract investors and prevent them from being liquidated. In addition, the findings of this study should help the Central Bank of Kenya devise better policies to stabilise the inflation rates to a minimum value that does not highly impact on the profitability of commercial banks and the financial market.

5.5 Limitations of the Study

The study was based on the secondary data which had been compiled by the Central Bank of Kenya, Kenya National Bureau of Statistics and the financial statements of commercial banks. The data used was extracted from the financial statements and the researcher was limited on any form of adjustments and fully relied on validity of data as it was presented. Therefore, results and findings of this study are subject to validity of the published financial statements of commercial banks.

Financial performance can be measured by other forms like return on deposits (ROD), return on investment (ROI), return on capital employed (ROCE), return on equity(ROE) etc. but the researcher settled on return on assets (ROA) to determine commercial banks profitability. Thus, the findings of this study entirely based return on assets as a measure of banks profitability. This was because this information was easily accessible to the researcher as compared to other parameters of measuring financial performance.

This study was only limited to commercial banks registered and operating from 1st January 2013, to 31st December, 2017 in Kenya. The findings are limited to commercial banks and cannot be applied to any other financial institutions or sectors in the Kenyan economy since all

companies are influenced by inflation rates. The time and cost of doing this study, it was not practical to include all other institutions.

The duration available for this reach was short and could not allow the researcher to query some of the information on the financial statements of some commercial banks. This was a limitation as there were aspects which needed clarification before being used in the study. The time couldn't allow for collection of extra information to help in explaining some the trends observed in the financial statements.

The method of data collection was not adequate as it could not provide the researcher with finer details on some of the values on the financial statements. Therefore, the data collection method limited the quality of data as the researcher only analysed data as it was published. A more detailed administered questionnaire could have provided an elaborate data on some parameters but this could not be done.

5.6 Suggestions for Further Research

Based on the findings of this study, all the control variables have failed the significance test and only inflation rate has been significant determinant of ROA. Therefore, there is need for more research to be conducted on the same topic but including variables like longevity of banks and public perception of each commercial bank in Kenya. In order to understand how inflation rates impacts various measures of financial performance, there is need for further research to be conducted. This can be either on return on deposits (ROD), return on investment (ROI), return on capital employed (ROCE), return on equity(ROE) etc. or all of them depending on availability of resources and data.

This study has established good findings, however, they are limited to commercial banks. To allow for generalization of the findings, there is need for an elaborate study which include both commercial banks and financial institutions registered and operating within the same study

period to allow for accuracy and reliability of findings. This will help both financial institutions and commercial banks to develop strategies that will assist in streamlining the inflation rates. There is need for a well-planned similar study with adequate time frame which can allow the researcher to obtain sufficient information required for the study as well as make enquiries for the values that do not add up or are erroneous. This will make the findings more reliable as some omissions and commissions errors would have sufficient time to be clarified. A study which involves both quantitative and qualitative data should be done on this topic to help understand deeper why some banks are making constant losses. In addition, a study involving interviews with commercial banks' management can give a different insight in addition to the one already obtained quantitatively. This will provide primary data which will be supporting the already available secondary data.

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APPENDICES

Appendix 1: Commercial Banks as at 31st December 2017

1. African Banking Corporation
2. Bank of Africa Kenya
3. Bank of Baroda Kenya
4. Bank of India
5. Barclays Bank of Kenya
6. CFC Stanbic Bank
7. Chase Bank Kenya
8. Citibank Kenya
9. Commercial Bank of Africa
10. Consolidated Bank of Kenya
11. Co-operative Bank of Kenya
12. Credit Bank
13. Development Bank of Kenya
14. Diamond Trust Bank
15. DIB Bank Kenya
16. Ecobank Kenya
17. Equity Bank
18. Family Bank
19. First Community Bank
20. GTB Bank
21. Guardian Bank
22. Gulf African Bank
23. Habib Bank A.G Zurich
24. Housing Finance
25. Imperial Bank
26. Investment & Mortgages Bank
27. Jamii Bora Bank
28. Kenya Commercial Bank
29. Mayfair Bank
30. Middle East Bank Kenya
31. M Oriental Commercial Bank

32. National Bank of Kenya

33. NIC Bank

34. Paramount Universal Bank

35. Prime Bank

36. SBM Bank Kenya

37. Sidian Bank

38. Spire Bank

39. Standard Chartered Bank of Kenya

40. Trans-National Bank

41. UBA Bank Kenya

42. Victoria Commercial Bank

Appendix 2: Data Collection Sheet

Annual data on commercial banks' profits (KES)

Bank/Year	2013	2014	2015	2016	2017
1) African Banking Corporation					
2) Bank of Africa Kenya					
3) Bank of Baroda Kenya					
4) Bank of India					
5) Barclays Bank of Kenya					
6) CFC Stanbic Bank					
7) Citibank Kenya					
8) Commercial Bank of Africa					
9) Consolidated Bank of Kenya					
10) Co-operative Bank of Kenya					
11) Credit Bank					
12) Development Bank of Kenya					
13) Diamond Trust Bank					
14) Ecobank Kenya					
15) Equity Bank					
16) Family Bank					
17) First Community Bank					
18) GTB Bank					
19) Guardian Bank					
20) Gulf African Bank					
21) Habib Bank A.G Zurich					
22) Housing Finance					
23) Investment & Mortgages Bank					
24) Jamii Bora Bank					
25) Kenya Commercial Bank					
26) Middle East Bank Kenya					
27) M Oriental Commercial Bank					
28) National Bank of Kenya					

29)	NIC Bank						
30)	Paramount Universal Bank						
31)	Prime Bank						
32)	Sidian Bank						
33)	Spire Bank						
34)	Standard Chartered Bank of Kenya						
35)	Trans-National Bank						
36)	UBA Bank Kenya						
37)	Victoria Commercial Bank						

Annual data on inflation rate (KNBS)

Item/Year	2013	2014	2015	2016	2017
Inflation Rate					

Appendix 3: Data

n	BANK	INFLATION RATE	YEAR	LIQUIDITY	MARKET POWER	SIZE OF THE FIRM	ROA	LEVERAGE
1	African Banking Corporation	5.72	2013	38	0.7	0.7	2.9	80.99
2	Bank of Africa Kenya	5.72	2013	34.5	1.9	1.77	2	69.74
3	Bank of Baroda Kenya	5.72	2013	60.6	1.9	1.93	4.8	80.5
4	Bank of India	5.72	2013	75.2	1.1	1.15	4.1	74.14
5	Barclays Bank of Kenya	5.72	2013	42	7.7	7.65	5.8	73
6	CFC Stanbic Bank	5.72	2013	68	6.3	5.43	4.1	56.06
7	Citibank Kenya	5.72	2013	63	2.6	2.83	7	61.43
8	Commercial Bank of Africa	5.72	2013	41.12	4.6	4.4	3.6	72.86
9	Consolidated Bank of Kenya	5.72	2013	27	0.6	0.5	-0.8	69.8
10	Co-operative Bank of Kenya	5.72	2013	32.6	8.5	8.61	4.7	76.36
11	Credit Bank	5.72	2013	36.7	0.3	0.28	1	75.41
12	Development Bank of Kenya	5.72	2013	1.14	0.6	0.47	1.8	54.03
13	Diamond Trust Bank	5.72	2013	32.6	4.2	4.26	4.9	74.19
14	Ecobank Kenya	5.72	2013	25.6	1.4	1.15	-3.3	68.69
15	Equity Bank	5.72	2013	34	8.8	9.79	7.7	66.55
16	Family Bank	5.72	2013	36.5	1.6	1.62	4	79.57

17	First Community Bank	5.72	2013	28.7	0.4	0.4	1.8	87.85
18	GTB Bank	5.72	2013	65	0.95	1.09	1.6	71.95
19	Guardian Bank	5.72	2013	33.4	0.5	0.46	3	87.11
20	Gulf African Bank	5.72	2013	34	0.6	0.62	2.7	80.79
21	Habib Bank A.G Zurich	5.72	2013	137	0.4	0.42	4.3	75.72
22	Housing Finance	5.72	2013	33.12	1.7	1.46	2.6	56.87
23	Investment & Mortgages Bank	5.72	2013	34.02	4.1	4.19	5.5	67.53
24	Jamii Bora Bank	5.72	2013	42	0.3	0.32	1.3	48.8
25	Kenya Commercial Bank	5.72	2013	33.3	12	12.83	5.5	73.37
26	Middle East Bank Kenya	5.72	2013	0	0.2	0.22	1.4	63.28
27	M Oriental Commercial Bank	5.72	2013	44	0.3	0.29	2.5	76.74
28	National Bank of Kenya	5.72	2013	42	3.4	3.39	1.9	84.32
29	NIC Bank	5.72	2013	28.54	4.2	4.17	4.6	74.6
30	Paramount Universal Bank	5.72	2013	67	0.3	0.3	1.2	82.21
31	Prime Bank	5.72	2013	42.4	1.8	1.74	3.8	82.01
32	Sidian Bank	5.72	2013	31.1	0.5	0.47	4.2	69.44
33	Spire Bank	5.72	2013	34.61	0.58	0.53	1	89.04
34	Standard Chartered Bank of Kenya	5.72	2013	38	8.2	8.09	6	70.16
35	Trans-National Bank	5.72	2013	48	0.4	0.39	2.3	74.35
36	UBA Bank Kenya	5.72	2013	96.6	0.1	0.17	-7.5	66.93
37	Victoria Commercial Bank	5.72	2013	30.1	0.5	0.51	4.3	66.29
38	African Banking Corporation	6.88	2014	30.6	0.7	0.63	1.49	74.86
39	Bank of Africa Kenya	6.88	2014	28.3	1.9	1.77	0.33	66.98
40	Bank of Baroda Kenya	6.88	2014	60.5	1.9	1.99	4.35	78.59
41	Bank of India	6.88	2014	74.2	1.1	1.11	3.74	71.77
42	Barclays Bank of Kenya	6.88	2014	44.2	7.1	7.27	5.44	72.9
43	CFC Stanbic Bank	6.88	2014	41	5.4	4.92	4.31	56.51
44	Citibank Kenya	6.88	2014	79.8	2.5	2.76	5.22	64.42

45	Commercial Bank of Africa	6.88	2014	38.8	5.5	5.12	2.57	69.42
46	Consolidated Bank of Kenya	6.88	2014	36	0.5	0.41	-1.82	70.58
47	Co-operative Bank of Kenya	6.88	2014	33.8	8.8	8.91	4.43	76.47
48	Credit Bank	6.88	2014	32.2	0.3	0.27	-1.02	81.36
49	Development Bank of Kenya	6.88	2014	1.2	0.5	0.48	1.88	49.93
50	Diamond Trust Bank	6.88	2014	35.6	4.4	4.63	4.47	71.96
51	Ecobank Kenya	6.88	2014	26.5	1.4	1.46	-1.09	70.57
52	Equity Bank	6.88	2014	30.4	8.7	8.7	7.26	73.07
53	Family Bank	6.88	2014	41	1.9	2.06	4.24	76.34
54	First Community Bank	6.88	2014	29.6	0.5	0.45	0.67	87.31
55	GTB Bank	6.88	2014	49.3	1	1.07	2.08	53.75
56	Guardian Bank	6.88	2014	34.4	0.5	0.45	2.59	86.77
57	Gulf African Bank	6.88	2014	28.7	0.6	0.64	3.11	79.96
58	Habib Bank A.G Zurich	6.88	2014	272	0.4	0.4	5.29	73.66
59	Housing Finance	6.88	2014	30.76	1.9	1.56	2.12	60.03
60	Investment & Mortgages Bank	6.88	2014	31	4.3	4.1	5.64	63.09
61	Jamii Bora Bank	6.88	2014	38	0.4	0.47	0.73	64.68
62	Kenya Commercial Bank	6.88	2014	31.3	11.8	12.69	5.93	73.41
63	Middle East Bank Kenya	6.88	2014	0	0.2	0.2	1.28	69.51
64	M Oriental Commercial Bank	6.88	2014	43	0.2	0.28	1.07	79.29
65	National Bank of Kenya	6.88	2014	31.5	3.8	3.6	1.9	85.24
66	NIC Bank	6.88	2014	33.08	4.3	4.24	4.44	67.69
67	Paramount Universal Bank	6.88	2014	60	0.3	0.31	1.32	77.37
68	Prime Bank	6.88	2014	37.5	1.7	1.72	4.18	81.83
69	Sidian Bank	6.88	2014	36.8	0.5	0.51	4.61	76.37
70	Spire Bank	6.88	2014	27.82	0.5	0.45	-2.78	86.24
71	Standard Chartered Bank of Kenya	6.88	2014	46.28	7	7.19	6.42	69.2
72	Trans-National Bank	6.88	2014	40	0.3	0.34	1.86	74.86
73	UBA Bank Kenya	6.88	2014	99.3	0.1	0.18	-6.97	75.19

74	Victoria Commercial Bank	6.88	2014	32.6	0.5	0.54	3.68	71.27
75	African Banking Corporation	6.58	2015	21.4	0.6	0.59	1.61	71.51
76	Bank of Africa Kenya	6.58	2015	41.5	2	1.81	-2.07	68.55
77	Bank of Baroda Kenya	6.58	2015	61.5	2	2.04	3.65	77.63
78	Bank of India	6.58	2015	56.5	1.2	1.16	3.49	58.38
79	Barclays Bank of Kenya	6.58	2015	34.1	6.9	6.94	5.01	68.57
80	CFC Stanbic Bank	6.58	2015	74	5.4	4.92	3.56	54.45
81	Citibank Kenya	6.58	2015	89.4	2.5	2.84	6.33	70.36
82	Commercial Bank of Africa	6.58	2015	44.1	5.7	5.58	3.14	74.84
83	Consolidated Bank of Kenya	6.58	2015	32	0.4	0.37	0.35	70.71
84	Co-operative Bank of Kenya	6.58	2015	36.1	9.7	9.83	4.14	77.66
85	Credit Bank	6.58	2015	31.5	0.3	0.28	-1.74	70.64
86	Development Bank of Kenya	6.58	2015	1.2	0.5	0.46	1.05	57.04
87	Diamond Trust Bank	6.58	2015	39	5.5	5.32	3.69	66.11
88	Ecobank Kenya	6.58	2015	33.2	1.5	1.42	0.18	65.77
89	Equity Bank	6.58	2015	29.1	9.8	9.44	6.56	69.32
90	Family Bank	6.58	2015	31	2.3	2.36	3.55	77.26
91	First Community Bank	6.58	2015	22.4	0.4	0.4	0.07	84.51
92	GTB Bank	6.58	2015	47.6	0.8	0.97	1.86	52.73
93	Guardian Bank	6.58	2015	35.77	0.4	0.43	2.25	85.53
94	Gulf African Bank	6.58	2015	35.8	0.7	0.72	4.42	76.98
95	Habib Bank A.G Zurich	6.58	2015	183	0.4	0.36	3.53	47.51
96	Housing Finance	6.58	2015	28.04	2	1.76	2.52	60.88
97	Investment & Mortgages Bank	6.58	2015	34	4.2	4.37	5.66	70.17
98	Jamii Bora Bank	6.58	2015	32	0.5	0.5	0.22	65.22
99	Kenya Commercial Bank	6.58	2015	30	13.4	14.1	5.01	74.34
100	Middle East Bank Kenya	6.58	2015	0	0.2	0.19	0.75	72.19
101	M Oriental Commercial Bank	6.58	2015	43.1	0.2	0.3	0.49	73.19

102	National Bank of Kenya	6.58	2015	30.7	3.6	3.42	-1.34	88.29
103	NIC Bank	6.58	2015	30	4.5	4.5	3.99	67.1
104	Paramount Universal Bank	6.58	2015	52	0.3	0.3	1.6	76.64
105	Prime Bank	6.58	2015	37.4	1.9	1.82	3.99	78.18
106	Sidian Bank	6.58	2015	32.2	0.5	0.6	2.72	70.03
107	Spire Bank	6.58	2015	27.5	0.4	0.4	-4.53	71.72
108	Standard Chartered Bank of Kenya	6.58	2015	53.74	6.7	7	3.83	73.48
109	Trans-National Bank	6.58	2015	34	0.3	0.33	2.39	72.09
110	UBA Bank Kenya	6.58	2015	52.1	0.2	0.2	-3.91	53.17
111	Victoria Commercial Bank	6.58	2015	27.1	0.6	0.59	3.38	70.05
112	African Banking Corporation	6.3	2016	27.13	0.6	0.6	0.99	71.71
113	Bank of Africa Kenya	6.3	2016	42.2	1.5	1.4	-0.03	61.55
114	Bank of Baroda Kenya	6.3	2016	65.2	2.2	2.4	4.67	78.25
115	Bank of India	6.3	2016	61	1.3	1.3	4.57	55.9
116	Barclays Bank of Kenya	6.3	2016	28.3	7	7	4.02	68.77
117	CFC Stanbic Bank	6.3	2016	54.6	5.5	5.1	3.37	59.54
118	Citibank Kenya	6.3	2016	89.3	2.8	2.8	5.84	60.48
119	Commercial Bank of Africa	6.3	2016	45.05	5.7	5.9	3.6	75.53
120	Consolidated Bank of Kenya	6.3	2016	26	0.4	0.3	-1.99	68.2
121	Co-operative Bank of Kenya	6.3	2016	33.2	9.5	9.9	5.15	74.14
122	Credit Bank	6.3	2016	32.7	0.3	0.4	1.3	74.87
123	Development Bank of Kenya	6.3	2016	1.7	0.4	0.4	0.58	35.26
124	Diamond Trust Bank	6.3	2016	48.9	6.6	6.4	3.64	69.47
125	Ecobank Kenya	6.3	2016	36.2	1.3	1.2	-6.13	68.42
126	Equity Bank	6.3	2016	47.7	10.3	10	6	73.02
127	Family Bank	6.3	2016	14.4	1.9	1.9	0.91	59.73
128	First Community Bank	6.3	2016	24.2	0.4	0.4	-0.28	84.58
129	GTB Bank	6.3	2016	56.9	0.8	0.9	2.23	55.92
130	Guardian Bank	6.3	2016	37.22	0.4	0.4	2.05	83.73
131	Gulf African Bank	6.3	2016	41	0.7	0.8	2.78	80.11

132	Habib Bank A.G Zurich	6.3	2016	118	0.5	0.5	3.65	69.12
133	Housing Finance	6.3	2016	21.05	1.8	1.6	2.12	56.04
134	Investment & Mortgages Bank	6.3	2016	37.26	4.4	4.2	5.27	63.21
135	Jamii Bora Bank	6.3	2016	20.2	0.4	0.4	-3.12	51.48
136	Kenya Commercial Bank	6.3	2016	30.3	13.7	14.1	5.64	76.59
137	Middle East Bank Kenya	6.3	2016	31.05	0.1	0.2	-1.93	76.36
138	M Oriental Commercial Bank	6.3	2016	39.3	0.3	0.3	0.36	69.92
139	National Bank of Kenya	6.3	2016	33	3.1	2.9	0.14	84.23
140	NIC Bank	6.3	2016	38.52	4.4	4.5	3.66	64.36
141	Paramount Universal Bank	6.3	2016	43	0.3	0.3	1.11	81.34
142	Prime Bank	6.3	2016	39.5	1.8	1.8	3.57	75.47
143	Sidian Bank	6.3	2016	25.5	0.6	0.6	0.3	65.56
144	Spire Bank	6.3	2016	22.72	0.4	0.3	-7.01	61.89
145	Standard Chartered Bank of Kenya	6.3	2016	56.93	6.8	7	5.1	74.56
146	Trans-National Bank	6.3	2016	24	0.3	0.3	1.53	76.45
147	UBA Bank Kenya	6.3	2016	34.4	0.2	0.2	0.89	34.77
148	Victoria Commercial Bank	6.3	2016	31.4	0.6	0.7	3.55	70.06
149	African Banking Corporation	7.7	2017	34	0.6	0.59	0.82	81.05
150	Bank of Africa Kenya	7.7	2017	36.3	1.4	1.25	0.06	61.51
151	Bank of Baroda Kenya	7.7	2017	65.6	2.4	2.56	5.26	80.82
152	Bank of India	7.7	2017	68.4	1.4	1.55	4.72	79.15
153	Barclays Bank of Kenya	7.7	2017	33.4	6.8	6.57	3.68	69.68
154	CFC Stanbic Bank	7.7	2017	52.3	6	5.62	2.34	74.64
155	Citibank Kenya	7.7	2017	64.5	2.5	2.56	6.49	66.64
156	Commercial Bank of Africa	7.7	2017	47.68	5.7	6.05	3.13	81.23
157	Consolidated Bank of Kenya	7.7	2017	22	0.3	0.26	-3.26	65.81
158	Co-operative Bank of Kenya	7.7	2017	33.8	10.2	9.93	4.31	73.5
159	Credit Bank	7.7	2017	29.6	0.4	0.38	1.24	79.4

160	Development Bank of Kenya	7.7	2017	1.7	0.4	0.37	0.35	46.97
161	Diamond Trust Bank	7.7	2017	53.2	6.7	6.72	3.05	77.48
162	Ecobank Kenya	7.7	2017	41.5	1.3	1.27	-2.68	85.78
163	Equity Bank	7.7	2017	54.8	9.6	9.85	5.68	74.7
164	Family Bank	7.7	2017	34.6	1.7	1.71	-1.99	68.97
165	First Community Bank	7.7	2017	43.6	0.4	0.39	1.25	85.16
166	GTB Bank	7.7	2017	55.4	0.7	0.85	0.87	60.09
167	Guardian Bank	7.7	2017	40.04	0.4	0.4	1.44	83.02
168	Gulf African Bank	7.7	2017	34.9	0.8	0.77	0.81	83.36
169	Habib Bank A.G Zurich	7.7	2017	116	0.5	0.45	2.19	73.81
170	Housing Finance	7.7	2017	20.7	1.6	1.43	0.63	59.52
171	Investment & Mortgages Bank	7.7	2017	34.62	4.6	4.78	4.09	72.98
172	Jamii Bora Bank	7.7	2017	-9.5	0.3	0.35	-5.93	43.67
173	Kenya Commercial Bank	7.7	2017	28.5	13.9	14.14	4.94	80.16
174	Middle East Bank Kenya	7.7	2017	47.94	0.1	0.14	-0.81	76.31
175	M Oriental Commercial Bank	7.7	2017	36.8	0.3	0.32	1.1	70.56
176	National Bank of Kenya	7.7	2017	36	2.7	2.37	0.67	91.11
177	NIC Bank	7.7	2017	46.72	4.8	4.62	2.94	73.65
178	Paramount Universal Bank	7.7	2017	40.9	0.2	0.25	1.01	81.01
179	Prime Bank	7.7	2017	48.6	1.9	2.01	2.59	77.12
180	Sidian Bank	7.7	2017	24.3	0.5	0.49	-3.28	73.26
181	Spire Bank	7.7	2017	14.16	0.3	0.23	-14.14	61.19
182	Standard Chartered Bank of Kenya	7.7	2017	58.73	7.1	7.11	3.34	79.28
183	Trans-National Bank	7.7	2017	24	0.3	0.28	0.52	77.22
184	UBA Bank Kenya	7.7	2017	56.5	0.2	0.21	0.21	64.47
185	Victoria Commercial Bank	7.7	2017	28.6	0.6	0.71	3.27	72.68