

**RELATIONSHIP BETWEEN INTEREST RATES AND PROFITABILITY OF  
MOTOR VEHICLE FINANCING IN KENYA**

**BY**

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## DECLARATION

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

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Date.....

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This management research project has been submitted for examination with my approval as a university supervisor.

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## **DEDICATION**

This project proposal is dedicated to my dear parents Mr. and Mrs. Kariuki for their tireless support. My brother Kariuki Mugwe and my Sister in Law Muthoni Mugwe for their continued support and encouragement throughout this period of undertaking the study.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

CBK	-	Central Bank of Kenya
CBR	-	Central Bank Rate.
CMA	-	Capital Markets Authority
CPI	-	Consumer Price Index
KNBS	-	Kenya National Bureau of Statistics
MoI	-	Ministry of Industrialization.
MPS	-	Monetary Policy Statement
NIP	-	Kenya National Industrialization Policy
NPL	-	Non-Performing Loans.
PPP	-	Purchasing Power Parity
ROA	-	Return on Assets
ROE	-	Return on Equity
ROI	-	Return on Investments
SACCO	-	Savings and Credit Cooperative Society.
SME	-	Small and Medium Enterprise



## ABSTRACT

A stable banking sector helps promote and strengthen economic growth by mobilizing resources for investment. It also provides a framework for undertaking financing of investment projects. The banking sector is very important in any economy, considering its basic function of which is to relocate funds from agents with surplus to those with deficit. The purpose of this study was to establish the relationship between interest rates on profitability of motor vehicle financing in Kenya. The total population consisted of all 43 commercial banks. Since the population of the study was small there was no need for sampling, therefore the whole population was used for study. The study used secondary data, which was readily available from both the Central Bank of Kenya. The study adopted a descriptive survey of the commercial banks in Kenya. Interest rates have always been thought to have significant relationship to profitability of motor vehicle financing by commercial banks. Secondary data was collected from financial reports of commercial banks in Kenya from 2008 to 2013. Regression analysis was conducted in order to establish the relationship of interest rate on motor vehicle financing by performance of commercial banks in Kenya. These variables included the interest rate (IR), the exchange rate (XR), liquidity (LQ) and money supply (MS), which are usually provided by the Central Bank. The dependent variable of the study was the profitability of motor vehicle financing measured by ROE of the commercial banks in Kenya as a percentage. The findings from the study confirmed that interest rates and liquidity had varying degrees of relationship with the profitability of motor vehicle financing of the commercial banks. The study also revealed that interest rates, exchange rate, money supply and liquidity positively influenced the profitability of commercial banks that engage in motor vehicle finance. This study also established that interest rates, exchange rate, and liquidity are positively correlated with the profitability of motor vehicle financing by commercial banks. This study therefore recommended that the Country should handle its macroeconomic policies appropriately as the changes in the macroeconomics like interest rates, bring about devaluation of the currency and impact the profitability and performance of the commercial banks.

# CHAPTER ONE

## INTRODUCTION

### 1.1. Background

The Motor Vehicle Industry is made up of all those firms that are engaged in the supply of motor vehicles, and may include supply of parts and accessories to the final consumer, maintaining and repairing of those vehicles (Bennet et.al, 2002). The Kenyan Motor Vehicle Industry is a big contributor to the Kenyan economy even though no extensive studies have been carried in this field and especially with relation to interest rates. Automotive and Auto parts industry is a major economic driver and the government should nurture and encourage growth and development of the industry (Kenya National Industrialization Policy Framework, 2010). Motor vehicles are an important durable good and that the performance of the motor vehicle industry has a significant impact on the overall economy (Doyle, 1997). Motor vehicles, used to transport people and goods are a necessity and an integrated part of the modern society with far reaching social-economic impact (Kenya National Industrialization policy framework, 2010).

Registration of motor vehicles has maintained an upward trend since 2011. The total number of newly registered motor vehicles in the country recorded a 9.1 per cent increase from 94,017 units in 2013 to 102,606 units in 2014 (Kenya National Bureau of Statistics, 2014). With the above-continued growth in demand for motor vehicles, financial institutions such as commercial banks provide motor vehicle finance for consumers looking for car loans.

Central Bank of Kenya's Bank Supervision Annual Report for 2014 highlighted that the net loans and advances from banks registered an increase of 22.7% from Kshs 1,532.4 billion in December 2013 compared to Kshs 1,881.0 billion as at December

2014, this increase has been attributed to easy access of personal loans from Banks. It is thus without doubt that the motor vehicle industry in Kenya stands to impact financial institutions that offer motor vehicle finance. Access to funds provides a genuine platform for investments in transport business for the borrower and interest income for the lender.

### **1.1.1. Interest Rates**

Amadeo (2012) defines interest rate as a cost to the borrower mainly because it is the rate at which the borrower pays back the lender for the use of their money. For example, an individual borrows capital from a bank to buy an asset, and in return the lender receives interest at a predetermined interest rate for deferring the use of funds and instead lending it to the borrower. Similarly, Amadeo (2012) explained that interest rate is the percent charged, or paid, for the use of money. It is charged when the money is being borrowed, and paid when it is being loaned. This is why it is commonly known as the cost of borrowing.

High interest rates in Kenya are hurting asset finance business. Interest is an additional cost to the end buyer. From October 2011 to June 2012 the Central Bank of Kenya (CBK) had to increase the Central Bank Rate (CBR) from 7% to 18% in an effort to tame runaway inflation and stabilize the weakening shilling consequently increasing commercial banks lending rates from low figures of 11% to about 25% (Omengo, 2012). A current case in point is the decreasing value of the Kenya shilling that has rocketed upwards from Kshs. 89 to Kshs.103 within a few months. In June 2015, CBK increased the CBR to 10%. Though the Monetary Policy Committee maintained the CBR at 8.5% since 2013, the current CBR rate of 10% implies that commercial bank lending rates will go up. Banks are highly supervised and are under the obligatory role of the Central Bank of Kenya which determines the base lending

rate; accommodating all factors in the economy and hence based on this the bank can determine their own lending rates a few basis points above the Central Bank lending rate (MPS, 2015).

Rising interest rates encourage people to save. When interest rates go up, borrowing becomes more expensive. This in turn results into a fall in finance, mortgage and other investments (Amadeo, 2012). Ultimately that influences currency devaluation and increase in cost of money and hence doing business. According to Hall (1985) a higher real interest rate makes consumer's defer consumption everything else held constant. With high interest rates, the cost of motor vehicle financing goes high which in turn will result into reduced profits for commercial banks due to the low demand of motor vehicle finance. High interest rate thus has a negative effect on bank profitability.

### **1.1.2. Profitability of Motor Vehicle Financing**

Profitability measures the firm's ability to generate revenue in excess of expense an accomplishment that is necessary if the firm is to be considered a going concern Coleman (2007). Pandey (1995) defines it as a measure of overall performance effectiveness of the firm. Profitability in commercial banks is determined by the ability of the banks to retain capital, absorb loan losses, support future growth of assets and provide return to investors. The largest source of income to the bank is interest income from lending activity (Qin and Pastory, 2012). A profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial systems.

In connection with achieving bank profitability expressed as balance-sheet profit, another particularly important fact is the structure of revenue generating assets. Revenue generating assets mean those asset operations that bring an interest income. These assets are the main source of income for commercial banks. Loans, interbank assets and securities operations all have an important position in the structure of a bank's assets. It is therefore obvious that the average revenue generation ability of these assets has a decisive influence on a commercial bank's profitability (Bobáková, 2003).

Bobáková (2003) further points out that back in the 1920s the American firm DuPont developed a basic method for the financial analysis of a firm, and which today is used in modified form also by the leading rating agencies in the analysis and evaluation of a bank's financial situation. Return on equity (ROE) and return on assets (ROA) indicators are those most often used in evaluating profitability.

The study utilized profitability ratio to analyze financial performance of commercial banks in Kenya. Profitability ratios consist of tests used to evaluate a firm's earning performance. The major types of profitability ratios are calculated in relation to sales and investments. Profitability in relation to investments includes; return on investments (ROI), return on equity and return on total assets.

There is a continuous growing demand in motor vehicles. An article in the business daily by Juma (2015) highlights that the number of units sold in 2014, is 20.3 percent more than the previous peak of 14,542 units recorded in 2013. This demand has established access to motor vehicle finance from commercial banks in Kenya. Motor vehicle dealerships are also continuously growing due to the demand in the Kenyan market and are earning commercial banks revenue as they finance their consumers.

Notably a bank will generate more income with the increasing number of units they finance.

The transport industry, for instance, which is a major player in purchase of motor vehicles for passenger transportation such as matatus, buses, taxis among others create a never-ending demand of motor vehicles. Motor vehicle purchase is an investment, which requires capital that most ordinary Kenyans cannot raise, therefore they turn to banks to finance this cost of purchase. CBK annual report (2014) shows the banking sector recording improved performance during the year 2013/2014. The major components of the balance sheet were loans and advances, government securities and placements which accounted for 58 percent, 21.3 percent and 5.1 percent of total assets, respectively. Net loans and advances registered an increase of 22.7 per cent from Ksh. 1,532.4 billion in December 2013 to Ksh. 1,881.0 billion in December 2014.

### **1.1.3. The Relationship Between Interest Rates and Profitability of Motor Vehicle Financing in Kenya**

Vehicle asset finance requires capital and since most people are not able to afford on savings they turn to banks for loans. Banks charge lending interest rates for their funds depending on the length of the loan and security, otherwise referred to as collateral (McEarchern, 2011). The interest rates charged to the borrower are based on the CBR, which the Central bank uses to control interest rates.

When interest rates are high, an individual for instance, has to pay more for borrowing. Low interest rates, as a common rule, are excellent for the economic atmosphere because customers can easily pay for taking loans, as they do not have to pay higher interest rates for the loans. McEarchern (2013) notes that consumers are more willing and able to borrow at lower interest rates other things held constant.

With low interest rates, consumers will borrow more hence the demand for loans on motor vehicles through bank finance will tend to be high. This potential demand will generate income from the interest on loans issued by different commercial banks. With high demand in motor vehicle finance, they will be a steady increase in income, which will impact on the banks profitability.

High frequency in car loans turnover increases any lending institutions profitability. Commercial banks profitability is determined by the amount of interest earned from lending. King (2015) in an article called the market realist notes that banks are set to benefit from greater demand of auto loans. King further suggests that auto loans at commercial banks grew to \$367 billion according to the Federal Reserve data released on June 12, 2015. A little over one third of all motor vehicle loans were owned by commercial banks. The auto loans at commercial banks grew by 9% in 2014. This rapid growth will benefit those banks with significant auto portfolios.

On the other hand, motor vehicle finance is continuously being affected by fluctuating interest rates. The cost of borrowing in all banks is driven by the real interest rate, which is fueled or largely accommodates inflation. Inflation is the key driver of interest rates. The real cost of borrowing is the real interest rate which is equal to the nominal interest rate minus the expected inflation rate. Nominal interest rate may not be the true cost of borrowing because part of the nominal interest rate is a reflection of the expected inflation rate (Arnold, 2008).

With fluctuations in the interest rates, commercial banks stand to lose out revenue generated from vehicle finance. The more competitive the lending rates the more demand a commercial bank will have which in turn will result to generation of revenue. The banks have an avenue to generate more income by giving attractive

lending rates to this individuals or businesses seeking car loans. High lending rates from commercial banks results in a push away from car loans to other avenues of car purchases. Dealerships for example may offer credit terms for car sales. The result is low profitability with comparison to other commercial banks with lower interest rates.

#### **1.1.4. Motor Vehicle Financing in Kenya**

Motor vehicle financing is whereby a financial institution lends money to an individual, an organization or a business entity to purchase a motor vehicle. Motor vehicle finance simply refers to a car loan, which is a type of secured installment loan, meaning it has collateral that is the car. This means, the financial institution can reposes the car, in the event, the consumer stops making payments on the car and monthly payments along with the interest rate. Car loans must be fully repaid within a certain period such as 36 months (3 years), 48 months (4 years), or longer (Singh, 2012).

Different institutions offer a different array of packages on car loans. The Standard Chartered Bank Kenya Limited (SCBK) for instance offers car loans with the following features. Finance is available for both new and used cars whereby high loan amounts of up to Kshs. 10 (ten) million for new cars and up to Kshs. 5 (five) million for used cars. Financing can be up to 90% for new cars and 80% for used cars with a repayment period of up to 60 months (5 years). The financing facility include both the cost of insurance and car tracking device and an attractive premium on comprehensive insurance ([www.sc.com/ke](http://www.sc.com/ke)).

Motor Vehicle financing therefore is a common practice in the Kenyan banking sector. As it stands, the banking sector comprise of 44 banking institutions (43 commercial banks and 1 mortgage finance company), 8 representative offices of



foreign banks, 9 Microfinance Banks, 2 Credit Reference Bureaus, 13 Money Remittance Providers and 87 Foreign Exchange Bureaus (CBK Annual Report, 2014). Car financing can be categorized as a strategic business unit in commercial banks since car loans have a large potential of earning a lot of revenue due to the high demands of car purchases. The main source of commercial bank's income is interest income through interest rates.

Motor vehicles are drivers of the economy, as all key industries require transportation. The transport sector is an important component of the economy and a common tool used for development. This is even more so in a global economy where economic opportunities are increasingly related to the mobility of people, goods and information. Transportation links together the factors of production in a complex web of relationships between producers and consumers. The outcome is commonly a more efficient division of production by exploitation of geographical comparative advantages, as well as the means to develop economies of scale and scope. The productivity of space, capital and labor is thus enhanced with the efficiency of distribution and personal mobility. Motor vehicles have significant economic opportunities to service industrial and commercial markets with reliable door-to-door deliveries. The automobile also permitted new forms of social opportunities, particularly with suburbanization (Rodrigue and Notteboom, 2013).

## **1.2. Research Problem**

Interest rates determine the profitability of a commercial bank among other factors (Gardner *et al.*, 2005). Commercial banks among other lending institutions derive income primarily from the lending and the securities portfolio. Loans form a larger portion of assets of a bank; this implies that interest and fees on loans are more

important sources of their income. Motor vehicle finance is lending a loan to a consumer interested in purchasing a motor vehicle whereby the motor vehicle is regarded as collateral. Commercial banks generate revenue through interest earned on motor vehicle finance.

Mishkin (1981) states that the real rate of interest affects business and consumers investment decisions and hence aggregate demand. This interest fluctuation affects the demand of motor vehicle purchase through bank finance. Motor vehicles require capital investments that most ordinary consumers cannot raise hence they turn to bank finance. Commercial banks have an opportunity to maximize revenue on interest income generated from motor vehicle loans. Interest rates have an effect on motor vehicle financing because with rising interest rates, the cost of borrowing increases making demand for car loans less attractive. This loss of demand similarly limits the banks opportunity to maximize on the profits that would have been generated from the income on loans.

The flip side on interest fluctuation shows that with a decrease in the interest rates, the cost of borrowing is low hence making demand for bank loans on motor vehicles very attractive. This demand for motor vehicles through bank finance will increase the banks revenue due to the amount of loans banks will issue to the consumer. There will be a higher frequency of motor vehicle purchases through bank finance due to the low costs of borrowing. Alternatively low interest rate creates growth in demand for car purchases due to access to cheap money, this will result in an increase of motor vehicle prices.

Businesses for instance are looking for ways to generate cash flow and expand, they are increasingly turning to asset based financing with banks and other financial institutions responding aggressively with unique products. When French firm Alios Finance recently opened a branch in Nairobi, its prime reason according to the directors was the fact that it was attracted by the multi-billion-shilling asset finance industry as local businesses increasingly warmed to alternative forms of lending. Consolidated Bank Head of Credit Charles Kamari says that lending for a wide variety of assets coupled with growth in the region makes the industry attractive. “The asset finance industry is very attractive as it offers opportunities for lending that cuts across all sectors, from vehicle to machinery finance” (Koigi, 2015).

Motor vehicle finance has a profound effect in commercial banks of Kenya as an interest-earning loan. CBK measures bank performance, using ratios calculated using the consolidated balance sheet and income statements and shows that loan interest income from early 1990s to present amounts to over 50% of total bank earnings. These records should place all interest earning loans as key business drivers of commercial bank activities. Though interest rate spread determines bank profitability, it is very demand elastic when it comes to motor vehicle financing (CBK, 2014)

There is very limited research in this area of study hence my research will be primarily on new assumptions and conclusions. In order to explain the relationship of interest rates and profitability of motor vehicle finance, I will make inferences from the interest income generated from loans on assets issued to consumers. Though commercial banks practice motor vehicle finance whereby banks issue out loans for the purchase of motor vehicles, this business practice is continuously being affected by fluctuating interest rates. This study seeks to find out whether interest rate fluctuations affect Motor Vehicle Finance and its implication on a banks profitability.

### **1.3. Research Objectives**

This study sought to establish the relationship between interest rates and profitability of motor vehicle financing in Kenya.

### **1.4. Value of the Study**

The study has value to the focus of commercial banks in Kenya, as it uncovers the relationship that the interest rates have on motor vehicle finance performance. Commercial banks can take appropriate measures to offer rates that appeal to their clients and at the same time maintain their profitability.

The result of this study is invaluable to researchers and scholars, as it would form a basis for further research. The students and academics will use this study as a basis for discussions on interest rates fluctuations and the motor vehicle finance scene in Kenya. The study is a source of reference material for future researchers on other related topics; it will also help other academicians who undertake the same topic in their studies.

This research is of interest to consumers of the motor vehicle finance service. As the main beneficiaries, consumers are able to purchase motor vehicles from their savings or bank loans. Consumers have a deeper understanding of costs of borrowing and effect of interest rate fluctuations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1. Introduction**

This chapter presents literature review on the relationship between interest rates and profitability of motor vehicle financing in Kenya. It begins by reviewing theories that inform the discussion on interest rates and asset finance performance. It then discusses the empirical studies on the relationship of interest rates and profitability of motor vehicle financing in Kenya and finally summarizes the literature review of the findings.

#### **2.2. Theoretical Review**

In the study, there are several theories that attempt to explain how interest rates affect economies and how they can be used to forecast future changes. These theories include classical, price, interest rate and loan able funds theories. Each of these theories makes assumptions regarding the behavior of aspects of the economy and focuses on the behaviors of other aspects as determinants of the prevailing interest rates.

##### **2.2.1. The Classical Theory of the Rate of Interest**

The classical writers Ricardo, Marshal and Pigou who observed that the rate of interest is the factor, which brings the demand for investment and the willingness to save into equilibrium with one another, gave the theory of the rate of interest. Investment represents the demand for investable resources and saving represents the supply, whilst the rate of interest is the “price” of investable resources at which the two are equated. Just as the price of a commodity is necessarily fixed at that point where the demand for it is equal to the supply, so the rate of interest necessarily

comes to rest under the play of market forces at the point where the amount of investment at that rate of interest is equal to the amount of saving at that rate. Marshall's Principles in not so many words states, "Interest, being the price paid for the use of capital in any market, tends towards an equilibrium level such that the aggregate demand for capital in that market, at that rate of interest, is equal to the aggregate stock forthcoming at that rate", (Keynes 1936).

The theory holds the proposition based on the general equilibrium theory that the rate of interest is determined by the intersection of the demand for and supply of capital. Thus, an equilibrium rate of interest is determined at a point at which the demand for capital equals its supply. Demand for capital stems from investment decisions of the entrepreneur class. Investment demand schedule reflects the demand for capital, while the supply of capital results from savings in the community. Investors agree to pay interest on those savings because the capital projects, which will be undertaken with the use of these funds, will be so productive that the returns on investment realized will be in excess of the cost of borrowing. Capital is demanded because it is productive, i.e. it has the power to yield an income after covering its cost. The marginal productivity curve of capital, thus, determines the demand curve for capital. When the rate of interest falls, the entrepreneur will be induced to invest more till marginal productivity of capital is equal to the rate of interest. Investment demand expands when the interest rate falls and it contracts when the interest rate rises (Priyadarshini, 2012).

### **2.2.2. Liquidity Preference Theory**

According to Keynes, who propounded this theory, investors will always prefer short-term securities to long-term securities. In an uncertain world, then, saving and investment may be much more influenced by expectations and by exogenous shocks

than by underlying real forces. One possible response of risk-averse savers is to vary the form in which they hold their financial wealth depending on what they think is likely to happen to assets prices- they are likely to vary the average liquidity of their portfolios. In periods in which people are confident that assets prices will increase, they are encouraged to hold a high proportion of their portfolios in liquid assets, benefiting from the higher rates of interest that they offer. Increased doubts about future assets prices, on the other hand encourages people to give up these higher rates of interest in search of greater security offered by more liquid assets. This happens in financial markets all the time. Again bonds with distant maturity dates carry more capital risk than those near to maturity and are thus relatively less attractive when the markets turn from the equity and bond markets and hold instead, short-term securities and cash during periods of uncertainty (Howels, 2007).

Here we see a quite different role for interest rates than that played in the loanable funds theory. Plainly, an expectation of an increase in interest rates increases the prospect of a fall in financial assets prices generally and for a greater relative fall in the prices of illiquid assets. In other words, an expected increase in interest rates, *ceteris paribus*, increases the preference of asset holders for liquidity. Keynes developed this general idea into an economic theory within a simplified model in which there were only two types of financial assets – money, the liquid asset, and bonds with no maturity date (consoles), the illiquid asset. An increased preference for liquidity in this model is equivalent to an increased demand for money. Thus the demand for money increases whenever people think interest rates are likely to rise than they believe they are likely to fall. This is Keynes' speculative motive for holding money instead of less liquid assets in order to avoid a capital loss (Mishkin, 2010).

### **2.2.3. Loanable Funds Theory**

The loanable funds theory was first enunciated by a Swedish economist, K. Wicksell and later developed by D.H. Robertson in England. The model is similar to the microeconomic model of aggregate supply and aggregate demand. It is a comparative statics equilibrium model that employs a supply and demand curve to locate a market clearing equilibrium price. The special price in this model is the cost of credit, which is the interest rate. There is, of course, a full spectrum of interest rates in the Kenyan economy, ranging from short-term rates on money market assets such as Treasury Bills to long-term rates, such as the interest rates on investments. Interest rates throughout this spectrum are never the same generally on any given day there are as many interest rates as there are securities that represent them. The simple version of the Loanable Funds Model simplifies this complexity by assuming only one ‘interest rate,’ which can be thought of as a proxy average for the entire structure of interest rates. Borrowers (represented by the demand curve) include consumer borrowers (credit cards, auto loans, home mortgages, installment credit, etc.), while lenders (represented by the supply curve) include direct lenders, such as banks, mortgage companies, credit card companies, and auto and equipment leasing companies. The many factors considered in loanable funds theory mean that equilibrium will be reached only when each of the factors is in equilibrium (Saunders and Cornett, 2011).

### **2.3. Determinants of Profitability in Motor Vehicle Finance**

Motor vehicle financing has considerable advantage to commercial banks and any other lending institution as a means of income generation, though this is highly dependent on the banks lending rates. Ho and Sanders (1981) argued that over time commercial banks margins have become increasingly sensitive to interest rate volatility. Changes in interest rates can greatly impact a person's ability to purchase a



car through bank loans. Mankiw (1987) on their study of consumer spending conclude that, spending on durables (in this case motor vehicles) should be substantially more sensitive to the after-tax real interest rate. The reason is that the interest rate affects the implicit user cost of durables.

### **2.3.1. Interest Rates**

Interest rates in the recent past have become a very sensitive factor in the operation of commercial banks. The central bank of Kenya has used it as a tool to control the inflation levels and also to manage the foreign exchange rates to acquire stability in the economy. With these happenings the commercial banks have had to contend with periods of high interest rates, which have affected the banks differently as different banks react differently to the impact of interest rate changes. This changes cause consumers to reduce their borrowings or halt them with the expectations that interest rates will eventually come down. Since one of the major sources of income for commercial banks is earned from interest related activity, it is of paramount importance that the commercial banks understand the impact of interest rates on their productivity in order to maximize shareholders wealth.

The interest rates are expected to reduce as pressure is put on the Central Bank and other banks here in Kenya, investors, developers, bank customers and other stakeholders. There is a lot of competition that banks are facing from SME financiers and money lending is becoming a popular business outlet at lower interest rates than the mainstream banks have been offering. Co-operative SACCOs are giving banks a run for their money and Chama Accounts are opening everywhere in the country. With this competition, interest rates are deemed to come down making costs of borrowing very attractive.

### **2.3.2. Exchange Rates**

Mathur (1982) argues that foreign currency exposures arise whenever a company has an income or expenditure or an asset or liability in a currency other than that of the balance-sheet currency. Movements in exchange rates tend to be influenced by two important variables; the relative prices of goods in two countries and relative interest rates. The Purchasing Power Parity (PPP) theorem explains the relationship between relative prices of goods and exchange rates. The PPP theorem propounds that under a floating exchange regime, a relative change in purchasing power parity for any pair of currency calculated as a price ratio of traded goods would tend to be approximated by a change in the equilibrium rate of exchange between these two currencies (Shapiro and Rutenberg 1976).

Currency fluctuations enter directly into the import price, producer price and Consumer Price Index (CPI). Exchange rate movements are transmitted to domestic prices through three channels (Hales, 2005). First is through prices of imported consumption goods. Exchange rate movement affects domestic prices directly. Second is through prices of imported intermediate goods. In this case, exchange rate movement affects production cost of domestically produced goods. Finally is through prices of domestic goods priced in foreign currency. The extent to which those changes are reflected in the consumer price index (CPI) depends on the share of imports in the consumption basket.

### **2.3.3. Money Supply**

Monetarists and mainstream Keynesians view money supply as exogenous or endogenous. The monetarist theory assumes that money supply causes loans. Mainstream Keynesians have maintained that changes in money supply by the central

bank will affect interest rates. Any changes in money supply through the monetary base will affect deposits and in turn loans. This makes money supply exogenous, as it is controlled by the central bank. Within the exogenous strand, there are two different views on the mechanisms through which monetary policy translates as money supply, which is expected to affect economic activity, and thus bank stock returns. These views are found in the literature as the money view and credit view (Badarudin, 2009).

The money view shows that, assuming the central bank directly influences the quantity of money by adjusting money supply, a decrease in money supply will increase real interest rates (without regard to what actually happens inside the banking sector), which raises a firm's cost of capital. With a higher cost of capital, there are fewer profitable projects. Thus the end result is a decrease in investment, causing aggregate output to decline. If the contrary happens, economic activity increases. The credit view of the monetary transmission mechanism insists that both money supply and bank loans are important in affecting aggregate output. Credit view observes the bank-lending channel whereby it takes into account that close substitutes for bank credit are unavailable for households and small firms; hence they rely mainly on bank credit for external financing (Badarudin, 2009).

#### **2.3.4. Liquidity**

Liquidity measures the ability of banks to meet short-term obligation or commitments when they fall due. Traditionally, banks take deposit from customers and give out loans. For this reason, the ratio of bank's advances to customer deposits is used as proxy for liquidity. Liquidity is a prime concern for banks and the shortage of liquidity can trigger bank failure. Banking regulators also view liquidity as a major concern. This is because banks without sufficient liquidity to meet demands of their

depositors risk experiencing bank run. Holding assets in a highly liquid form tends to reduce income, as liquid assets are associated with lower rates of return. For instance, cash, which is the most liquid of all assets, is a non-earning asset. It would therefore be expected that higher liquidity would negatively correlate with profitability. Indeed, Molyneux *et al.*, (1992) and Guru *et al.* (1999) discovered that negative correlation exists between the level of liquidity and profitability. However, Bourke (1989), and Kosmidou *et al.* (2005) found a significant positive relationship between liquidity and bank profits.

#### **2.4. Empirical Review**

Doyle (1997) observes that interest rate increase may not affect real motor vehicle sales if the automakers are able to counteract the rate increases with lower prices. Nonetheless it would still not be true that the interest rate had no effect on the motor vehicle industry. To illuminate these effects, this study examines the relationships between interest and tax on car prices. Because a majority of consumers finance a new car purchase, the ultimate cost of a new car depends on interest rate as well as the sales tax inclusive in price. Roughly three quarters of the respondents who purchase a new car finance their motor vehicle purchases. Although an increase in the after tax real interest rate slightly reduces the probability of buying a new car, consumers will pay a slightly higher price for a car when the real interest rate falls or the tax subsidy to interest payments rise. Evidence also shows an over shifting of taxes onto prices in the motor vehicle industry.

Théoden and Nathan (1999) noted that when interest rates are low, people are willing to borrow because they find it relatively easy to repay their debts. However when interest rates are high, people are reluctant to borrow because repayment on loans cost

more. Some consumers may even find it difficult to meet their existing loan repayments, especially if interest rate increases faster than the rise in the consumer income. In addition, if interest rate rises sharply, some consumers will default on their loans.

Saunders and Schumacher (2000), experienced the dealer model on countries in Europe and United States, 614 banks were taken up for data as sample size for 1988 to 1995 as sample period. Across the countries volatility, interest rate and regulatory requirements have positive effects on bank's net interest margin.

Boot and Thakor (2000) studied that when banks compete to gain clients, firms are able to borrow from multiple banks at lower costs. During the past two decades, and the banking sector in Portugal has experienced a high degree of liberalization. Most of the state-owned banks have become privatized. Credit granted to the private sector has recorded a remarkable growth and interest rates decreased steadily Ribeiro (2007). These developments should have contributed to increased competition in the Portuguese banking system, thus allowing firms to borrow from multiple banks at a lower cost.

As revealed in the study of English (2002) and Hanweck and Ryu (2005), interest rate changes and the slope of the yield curve have significant effects on banks' net interest income. In this view, returns on bank liabilities are thought to be relatively closely tied to short-term rates, and to adjust to changes in short-term rates relatively quickly. By contrast, returns on bank assets are seen as more closely tied to longer-term rates and slower to adjust to changes in market rates. As a result, bank net interest margins are expected to be higher when the yield curve is steeper for a sustained period because, once assets and liabilities have re-priced, a steeper yield curve implies higher

rates on assets relative to those on liabilities. In addition, for a given yield curve slope, an increase in both short-term and long-term interest rates is expected to temporarily reduce net interest income, reflecting the more rapid adjustment of yields on liabilities than yields on assets. According to the study of English (2002) the configuration of market interest rates should influence bank net interest margins and that a steep yield curve should be associated with higher net interest margins.

Kamau (2008) studied determinants of profitability of microfinance institutions in Kenya by a survey method by use of secondary data. Her findings were that profit before tax depended mainly on interest income, interest expense, shareholders funds, loans and advances to customers. Also other determinants of profitability of microfinance institutions include provision for bad and doubtful debts and deposits and balances due from other financial institutions. Margarita et al, (2000) found out that well capitalized banks face lower expected bankruptcy cost thus lower funding costs and higher returns interest margins on assets.

Moreover, most empirical evidence on the impact of the interest rate on commercial banks profitability shows a positive relation between interest and profitability. For instance, Toni Uhomobhi, (2008) investigation on the impact of macroeconomic variables on commercial banks profitability in Nigeria over the period of 1980-2006 reveal that real interest rate is a significant macroeconomic determinants of banks profitability in Nigeria. The finding also exhibits a positive relation between interest rate and profitability. This finding is in support of the observation of Sufian et al. (2008), which portrays a positive impact of macroeconomic conditions including interest rate on commercial banks profitability in Philippi; Karkrah and Ameyaw (2010). Moreover, a research done by Pasiouras and Kosmidou (2007) on factors influencing the profitability of domestic and foreign commercial banks in the

European Union also revealed a positive relation between interest rate and banks' profits with regards to domestic banks. They reported that inflation was positively related to profitability of domestic banks because domestic banks anticipated the levels of inflation and because that the banks got the opportunity to adjust the interest rates accordingly and consequently earned higher profits. To measure the effect of interest rate on profitability Devinaga Rasiah (2010) use base-lending rate (BLR) as a proxy for market interest rate and presented it as variable in his studies.

Sufian and Habibullah (2009) study the performance of 37 Bangladeshi commercial banks. The findings suggest that banks with higher loans-to-asset ratios tend to be more profitable. Thus, in the case of the Bangladeshi banking sector, bank loans seem to be more highly valued than alternative bank outputs such as investments and securities. The empirical findings of this study suggest that bank specific characteristics, in particular loans intensity, credit risk, and cost have positive and significant impacts on bank performance, while non-interest income exhibits negative relationship with bank profitability. It is notable that interest income on loans increases commercial banks profitability. This thus suggests that with attractive interests rates, commercial banks can generate revenues from interest on loans.

Rasiah (2010) advocates that interest rate have been captured in most studies as profitability determinant of commercial banks because net interest income which results from the deference between interest income and interest expenses has enormous impact on banks profitability. He stated that most research papers on banks' profit determinants present the interest rate, as external variable because changes in interest rates is mostly caused by government economic policies and supply and demand market conditions. Moreover, He mentioned that the impact of interest rate

changes on the commercial banks profitability depend on the extent and speed at which the change have on short and long term period of banks portfolio. And also the speed and flexibility with which the bank can amend its revenue sources and cost of funds to match up to the change. In addition, it is also about the proportionality of the bank's assets and liabilities that are long period rather than short period.

CBK has accused commercial banks of fuelling loans defaults by charging borrowers high interest rates. Mwega (2010) studied how the global financial crisis affected Kenya, in his study; the ratio of Non-performing loans (NPLs) to assets is an indicator of banks' lack of asset quality and financial soundness. In Kenya, the NPL/assets ratio decreased from a high of 23.27% in 2000 to a low of 4.02% in 2008, an indication that the banking system's asset quality had improved. This may be attributed to the requirements for bad loans provisions and increased core capital mandated by CBK. According to CBK, net NPLs as a share of total loans declined from 2.9% in March, 2008 to 2.2% in November, 2008. Increased provisions for bad loans in 2005 and 2006 accompanied this, with a decline thereafter in 2007 and 2008. However, there is some evidence that the ratio increased slightly in 2009. According to CBK's September, 2009 Monthly Economic Review, the ratio of net NPL to gross loans increased from 3.4% in August, 2008 to 3.7% in August 2009.

According to Omengo (2012), High interest rates in Kenya are hurting real estate investment. Interest is a cost to the developer of real estate as it is to the end buyer. Commercial banks have increased their lending rates from low figures of 11% to about 25%. High interest rates in Kenya mean that ongoing projects will cost more when finally delivered. This will be due to higher costs of material, labour and most importantly the cost of construction money. New investors will shy away from real estate investment resulting in low investment. The Monetary Policy Committee of the



CBK in February 2012 decided to maintain the CBR at 18%. This implies that commercial bank lending rates would remain high for the succeeding months. For existing customers, commercial banks have agreed to restructure their loans to ease their increased burden due to the high interest rates.

## **2.5. Summary of Literature Review**

The relationship between interest rates and bank performance is broadly covered. Bank profitability is for the most part determined by interest rate volatility and interest rate spread. The chapter-reviewed relationship between interest rates and profitability of commercial banks engaged in finance. Though the review did not focus on motor vehicle finance, the literature reviewed general bank interest income on loans and advances. The literature indicates that there is a distinct relationship between interest rates and bank profitability. This link is associated with the interest rate spread primarily among other internal and external determinants. Interest rate fluctuations also impact negatively on bank profitability as they may lead low demand in borrowing due to the increased costs, more so consumers may find it difficult to repay their existing loans. The literature also takes note that attractive interest rates has a positive relation to bank profitability.

The study of the relationship between interest rates and the motor vehicle industry is not extensively covered. There is little to no empirical studies on the relationship of interest rates to profitability of motor vehicle financing, bearing in mind that the motor vehicle industry is a key sector in the Kenyan economy. There is therefore a literature gap on the relationship between interest rates and profitability of motor vehicle financing. From the studies, it is clear that interest rates have a wide array effect on loans and investment. In this case, motor vehicle financing is impacted by the changes in interest rates.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1. Introduction**

This chapter outlines the methods and procedures used in this research. The chapter covers the research design, population, data collection and data analysis techniques.

#### **3.2. Research Design**

Research design is the scheme, outline or plan that will be used to generate answers to research problems (Orodho, 2003). This study adopts the descriptive research design based on the key areas of interest. Descriptive research is used to describe characteristics of a population or phenomenon being studied. According to Mugenda and Mugenda (2003), descriptive research design has help the researcher to clearly identify and describe true characteristics of a research problem without manipulation of research variables.

According to Polit and Beck (2004), in a descriptive study, researchers observe, count, delineate, and classify. They further describe descriptive research studies as studies that have, as their main objective, the accurate portrayal of the characteristics of persons, situations, or groups, and/or the frequency with which certain phenomena occur.

#### **3.3. Target Population**

The target population refers to the entire group of individuals or objects from which the study sought to generalize its findings (Cooper and Schindler, 2008). Mugenda and Mugenda (2003) define population as an entire group of individuals or objects having common observable characteristics. The target population was 43 commercial

banks in Kenya offering motor vehicle financing according to Central Bank of Kenya survey (2014). The study will take a census approach since the population is not large to necessitate sampling.

### **3.4. Data Collection**

Secondary sources of data were used to ensure that the study is accurate and reliable. The researcher gathered data from financial statements, annual bulletins and reports from CBK, Kenya National Bureau of Statistics (KNBS), Capital Markets Authority (CMA) and specific banks. This research paper extracted data on exchange rates, Interest rates, loans and advances for the period of 2008 to 2013.

### **3.5. Data Analysis**

The study used both descriptive and inferential statistics in analyzing the data. Analysis will be done with the help of Statistical package for social sciences (SPSS). Data was collected, sorted and collated.

#### **3.5.1. Analytic Model**

In this paper interest rate is an independent variable and profitability from Motor Vehicle finance is a dependent variable. The analysis was quantitative and descriptive. Quantitative analysis was carried out using linear regressions. Regression analysis was used in finding out whether an independent variable predicts a given dependent variable (Zinkmund, 2003). Regression analysis was therefore used to determine the relationship between interest rates and profitability of Motor Vehicle finance. Profitability from Motor Vehicle Financing segment for each bank was regressed against interest rates. The regression equation used was as follows:

$$\text{ROE} = \alpha + \beta_1 \text{IR} + \beta_2 \text{XR} + \beta_3 \text{MS} + \beta_4 \text{LQ} + \text{E}$$

Where;

**ROE** is the profitability measure for motor vehicle financing.

$$\text{ROE} = \text{Net Income on Motor Vehicle Loans} / \text{Capital Allocation for Loans}$$

$\alpha$  is the value of profitability when IR is zero.

$\beta_1, \beta_2, \beta_3, \beta_4$  are the coefficients of determination.

**IR** is the interest rates.

**XR** is the exchange rates.

**MS** is money supply.

**LQ** is liquidity.

**E** is the error term.

### **3.5.2. Test of Significance**

Analysis of Variance (ANOVA) was used to test the regression model level of significance at 95% confidence level and 5 % level of significance. F test and T-tests were used to test for any significance difference between interest rate fluctuation and profitability of motor vehicle financing in Kenya. Adjusted R squared was used to determine the variation in the dependent variable due to changes in the independent variables.

## CHAPTER FOUR

### DATA ANALYSIS, RESULTS AND INTERPRETIONS

#### 4.1. Introduction

This chapter presents the data analysis, interpretation and discussion of the research findings. The collected data was analyzed and interpreted in line with the study objective, which was to determine the relationship between interest rates and profitability of motor vehicle financing in Kenya. The chapter is divided into section 4.1 on Introduction, 4.2 Descriptive Analysis, 4.3 Diagnostics tests, 4.4 Correlation Analysis and 4.5 Interpretation of findings.

#### 4.2. Descriptive Analysis

**Table 4.1: Descriptive Statistics**

<b>Variable</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>Minimum value</b>	<b>Maximum Value</b>	<b>Observations</b>
<b>ROE</b>	2.076273	1.795005	-4.03	17.43	215
<b>IR</b>	16.60594	23.09305	11	25.00	215
<b>XR</b>	14.34	0.23	14.03	14.83	215
<b>LQ</b>	8.95	17.42	7.64	10.01	215
<b>MS</b>	39.63	4.88	32.00	47.00	215

Table 4.1 presents the descriptive statistics for the data. Four variables namely, ROE, IR, XR, MS and LQ with 215 observations each were used of the analysis. ROE had a mean of 2.1% and a standard deviation of 1.8%. Its minimum value was -4.03% and maximum value was 17.43%. IR had a mean of 16.6% and a standard deviation of 2.1%. Its minimum and maximum values are 11.00% and 25.00% respectively.

## Regression Analysis

Table 4.2 a) shows regression model summary results. The table shows results for  $R^2$  and adjusted  $R^2$  the standard error of estimate.

**Table 4.2 a): Model Summary**

### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.933	.872	.552	1.05

The results for the Table 4.2 a) show that the independent variables had a high correlation with the Return on Equity (0.9330). The model accounted for 55.2% of the variance in the Return on Equity (Adjusted  $R^2 = .552$ ).

The results in table 4.2 b) present the anova from the regression analysis showing the significance of the F –statistic.

**Table 4.2 b) Anova**

### ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.652	8	.452	2.214	.012
	Residual	7.462	109	.225		
	Total	11.114	214			

It is also clear that the significance value of 0.012 is relatively significant in explaining the variance on profitability of motor vehicle financing in Kenya.

Table 4.5 shows the results of the regression coefficients. The significance is shown in terms of t values and the p values.

**Table 4.2 c): Model coefficients**

**Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.995	.421		4.737	.002
	IR	.697	.251	.437	2.305	.013
	XR	.096	.221	.532	3.147	1.48
	LQ	.768	.246	.663	3.233	.07
	MS	.185	.158	.196	1.247	1.49

a. Dependent Variable: ROE

The study examined the effect between the interest rate and the profitability of motor vehicle financing. The model coefficients show that the interest rate IR is significant at 5% level of significance in explaining the model. The study determined that interest rates had a strong positive effect on motor vehicle financing ( $B=.697$ ,  $P=0.013$ ). The results also show that exchange rate was insignificant at 5% level of significance. Liquidity was found to be significant in explaining the model at 5% level of significance. However, money supply was found to be insignificant in explaining the model at 5% level of significance.

The model coefficients confirm that the four independent variables have positive coefficients. Table 4.2 c) reveals that interest rate IR has a positive coefficient of **.697**, exchange rate XR has a positive coefficient of **.096**, Liquidity LQ has a positive

coefficient of **.768** and money supply MS has a positive coefficient of **.185**. The model can be illustrated as shown below.

$$\text{ROE} = 1.995 + .697X_1 + .096X_2 + .768X_3 + .185X_4 + 0.251$$

### 4.3. Diagnostic tests

Durbin Watson test for auto correlation as statistical test used to detect the presence of autocorrelation in the residuals. Let  $e_i$  be residual sorted into time order then the Durbin Watson test statistic is

$$d = \frac{\sum_{i=2}^n (e_i - e_{i-1})^2}{\sum_{i=1}^n e_i^2}$$

matrix, exact critical If  $d$  is less than 2 then there is a positive serial correlation, if  $d$  is 2 then there is no serial correlation. If  $d$  is more than 2 then there is a negative serial correlation. Because of the dependence of any computed Durbin Watson value on the associated values of Durbin Watson statistic are not tabulated for all possible cases. The conventional Durbin Watson tables are not applicable when you do not have constant term in the equation.

According to our model  $d=1.5510$ ,  $p \text{ value}=0.008832$  Where  $d$  represents Durbin Watson Since  $d$  is less than 2 then there is evidence of positive serial autocorrelation in the residual.

### 4.4. Correlation Analysis

Pearson correlation was used to examine if there was correlation or degree of association between the firms performance.



**Table 4.3: Correlation Matrix**

	ROE	IR	XR	LQ	MS
ROE	1				
IR	0.0290	1			
XR	.839*	.146	1		
LQ	.614*	.317	.282	1	
MS	-0.40	.427	-.109	.211	1

The results presented in the table 4.3 above show that exchange rate are highly correlated to ROE at .839. Also from the results liquidity is highly correlated to ROE at .614, Interest Rate (IR) is lowly correlated to ROE at 0.0290. The results also indicate that Money Supply (MS) is lowly and negatively correlated to ROE at -0.40.

#### **4.5. Interest Rates and Profitability of Motor Vehicle Financing in Kenya**

The study found that the regression equations for the period 2008 to 2013 related profitability of motor vehicle financing by commercial banks to the interest rate, money supply, exchange rate and liquidity. From the findings of the model summary from 2008 to 2013, 55.2% of profitability of motor vehicle financing measured by ROE was explained by the independent variables (Exchange rate, Liquidity, interest rate and Money supply) investigated in the study while other factors not studied in this research contributed 13.8%. From the coefficient table of 2008 to 2013, taking all factors (Liquidity, Money supply, Interest rate and exchange rate) constant at zero, Returns will be 1.995. The data findings analyzed also showed that taking all other independent variables at zero, a unit increase in interest rate IR will lead to a 0.699 increase in profitability. A unit increase in exchange rate will lead to a 0.096 increase in profitability. A unit increase in liquidity will lead to a 0.768 increase in profitability while a unit increase in money supply will lead to a 0.185 Increase in profitability.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1. Introduction

The objective of the study was to determine the relationship between interest rates and profitability of motor vehicle financing in Kenya. This chapter provides the summary of findings, conclusion, recommendations and suggestions for further research.

#### 5.2. Summary and Interpretation of Findings

The study sought to establish the relationship between interest rates and profitability of motor vehicle financing in Kenya. The regression results show that the model accounted for 55.2% of the variance in ROE ( $R^2 = .552$ ). The Anova results show that F-statistic of 2.214 was significant at 5% level of significance = .012, thus the model is fit to explain the relationship between interest rates and profitability of motor vehicle financing in Kenya.

The study examined the effect of interest rates. Interest rate was measured by determining the proportion of interest charged to the borrower expressed as an annual percentage of the loan outstanding. The study found out that interest rates had a strong positive relationship with profitability of motor vehicle financing ( $B = .697$ ,  $P = .013$ ). This means that ROE is strongly explained by the interest rate. These findings are consistent with a study by Sufian and Habibullah (2009) on the performance of 37 Bangladeshi commercial banks. The findings suggest that banks with higher loans-to-asset ratios tend to be more profitable. Thus, in the case of the Bangladeshi banking sector, bank loans seem to be more highly valued than alternative bank outputs such as investments and securities. The empirical findings of this study suggest that loans

intensity, credit risk, and interest rate have positive and significant impacts on bank performance, while non-interest income exhibits negative relationship with bank profitability.

The study examined the effect of exchange rate. The exchange rate was measured by how much it cost to exchange one currency for another. The study found out that exchange rate had a weak positive relationship with the return on profitability of motor vehicle financing measured by ROE ( $B=0.096$ ,  $p=1.48$ ). This means that ROE is influenced by the exchange rate.

The study examined the effect of liquidity. The liquidity was measured by the proportion of current assets to current liability. The study found out that liquidity had a strong positive relationship with the return on profitability of motor vehicle financing measured by ROE ( $B = 0.768$ ,  $p = 0.07$ ). This means that ROE is strongly influenced by liquidity. This means that ROE is strongly influenced by the exchange rate.

These findings confirms the findings of a study by Pasiouras and Kosmidou (2007) on factors influencing the profitability of domestic and foreign commercial banks in the European Union also revealed a positive relation between exchange rate and banks' profits with regards to domestic banks.

The study too examined the effect of money supply. The money supply was measured by the proportion of money in circulation to that held in reserves. The study found out that the money supply had a weak positive relationship with the return on profitability of motor vehicle financing measured by ROE ( $B = 0.185$ ,  $p = 1.49$ ). This means that ROE is not influenced by the money supply.

These findings contrast with the study by Uhomoibhi, (2008) investigation on the impact of macroeconomic variables on commercial banks profitability in Nigeria over the period of 1980-2006 reveal that money supply is a significant macroeconomic determinants of banks profitability in Nigeria. However, this finding is in support of the observation of Sufian et al. (2008), which portrays a positive impact of macroeconomic such as money supply and including interest rate on commercial banks profitability in Philippines, (Karkrah and Ameyaw, 2010).

### **5.3. Conclusions from the Study**

The study found that interest rates of had a positive and significant relationship with the profitability of motor vehicle financing in Kenya. This leads to the conclusion that interest rates have got a positive and significant effect on profitability of motor vehicle financing. This is consistent with some studies on effect of interest rates. In a study by Sufian and Habibullah (2009) on the performance of 37 Bangladeshi commercial banks, the findings suggest that banks with higher loans-to-asset ratios tend to be more profitable. The empirical findings of this study suggest that loans intensity, credit risk, and interest rate have positive and significant impacts on bank performance, while non-interest income exhibits negative relationship with bank profitability.

The study found that the exchange rate had a weak and an insignificant relationship with the profitability of motor vehicle financing. The study is therefore consistent with some of past studies that indicate that exchange doesn't contribute much to the profitability of financing measured by ROE.

The study found that liquidity had a positive and significant relationship with the profitability of motor vehicle financing. The study therefore concludes that liquidity

has effect on the profitability of motor vehicle financing in Kenya. These findings are consistent with past studies on effect of liquidity on profitability measured by Return on Equity, ROE.

The study found that money supply had a weak positive and insignificant relationship with the profitability of motor vehicle financing. The study therefore concludes that liquidity has no effect on the profitability of motor vehicle financing in Kenya. These findings are consistent with past studies on effect of liquidity on profitability measured by Return on Equity, ROE.

#### **5.4. Recommendations of the Study**

The study has revealed that the interest rates has a more significant effect on the profitability of motor vehicle financing. It will be important for CBK to efficiently regulate the interest rates to ensure that it provides favorable conditions for the commercial banks.

The study has also revealed that liquidity has a significant effect on the profitability of motor vehicle financing. It will be important if the government will enact sound monetary policies in order to enhance liquidity in the banking industry that will help promote motor vehicle financing. The government will also need to seek for the best practices in monetary policy development from those more advanced economies in order to develop better monetary policies that can improve the performance of the banking industry.

The study will be important for the CBK to do wider consultations with all stakeholders before adjusting the base interest rate. This will assist in reducing the effects that are brought by adjustments of the base interest rates. The study revealed that frequent fluctuations in the base interest rates also led to frequent changes in the

amount of money commercial banks channel into investments. This has other effects on the lending decisions that are made by the banks as well as other investments decisions. The Central Bank of Kenya should be careful not to attract so much investment from the commercial banks as this will affect the lending decisions made by the banks hence their ability to finance projects.

### **5.5. Limitations of the Study**

The study had a few challenges in accessing complete and comprehensive data for all the commercial banks operating in Kenya. The study also faced the challenge of unstandardized accounting practices among financial institutions especially in as far as policies and guidelines on depreciation are concerned. The policy applied in the preparation of financial statements and in the computation of returns on assets was not uniform across all the financial institution. This made it difficult to do comparison across the commercial banks.

The results of this study are limited to the commercial banks in Kenya. Therefore the findings can only be directly applicable to the commercial banks that are operating in Kenya. At the same time the, the findings are also relevant to the duration that is specified in this study and not any other duration. The study was based on a five year study period from the year 2008 to 2013 a longer duration of time would have captured more data and probably given more reliable results in .This may have probably given a longer time focus hence given a broader dimension to the problem.

Time and financial resource limitations could not allow the researcher to cast the net wider than the commercial banks. If it were possible all the financial institutions would have been part of this study but this could take a lot more time and finances to achieve and the researcher did not have the capacity to do this.

## **5.6. Suggestions for Further Research**

This study focused on the relationship between interest rates and profitability of motor vehicle financing in Kenya. It will be essential to carry out another study of comparative nature with other countries to establish the similarities or to assist authenticate the findings of this study. It will be significant to carry out a study to establish the variables that explain the more than 10% variance on the profitability of the motor vehicle financing in Kenya. This is important because the study has managed to establish that the interest rates, exchange rate, liquidity and monetary supply variables account for 87.2 % of the variance.

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## APPENDICES

### **Appendix1: List of Commercial Banks in Kenya**

1. African Banking Corporation Limited
2. Bank of Africa Kenya Ltd
3. Bank of Baroda (K) limited
4. Bank of India
5. Barclays Bank of Kenya Ltd
6. CFC Stanbic Bank Ltd
7. Charterhouse Bank
8. Chase Bank Ltd
9. Citibank N.A Kenya
10. Cooperative Bank of Kenya Ltd
11. Commercial Bank of Africa ltd
12. Consolidated Bank of Kenya
13. Credit Bank
14. Development Bank of Kenya
15. Diamond trust Bank Ltd
16. Dubai Bank Kenya Ltd
17. Ecobank Ltd
18. Equitorial commercial BANK Ltd
19. Equity Bank
- 20 Family Bank Ltd
- 21First community Bank Ltd
22. Fidelity commercial Bank
23. Giro Commercial Bank Ltd

24. Guaranty Trust Bank Ltd formerly Fina Bank
25. Guardian Bank Ltd
26. Gulf African BANK ltd
27. Habib Bank A.G .Zurich
28. Habib Bank Ltd
29. Imperial Bank Ltd
30. Investments and mortgages Bank Ltd
31. Jamii Bora Bank Ltd
32. K-rep Bank Ltd
33. Kenya commercial Bank Ltd
34. Middle East Bank (k) Ltd
35. National Bank of Kenya Ltd
36. NIC Bank Ltd
37. Oriental commercial Bank Ltd
38. Paramount universal Bank Ltd
39. Prime Bank Ltd
40. Standard Chartered Bank Ltd
41. Transnational Bank Ltd
42. UBA Kenya Ltd
43. Victoria Commercial Bank LTD

## Appendix 2: Research Data

### Mean ROE, IR, XR, MS and LQ

	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
<b>ROE</b>	0.0329	0.0321	0.0282	0.0278	0.0274	0.0267
<b>IR</b>	8.7	8.8	8.90	9.40	8.20	10.20
<b>XR</b>	77.0000	75.8200	80.7519	85.0681	86.0286	86.3097
<b>MS</b>	65.1100	76.0081	78.0020	79.0203	80.0200	85.0002
<b>LQ</b>	45.10	39.80	44.50	37.00	41.90	38.60