

**RELATIONSHIP BETWEEN INTEREST RATE CAPPING AND SUPPLY OF  
CREDIT BY KENYAN COMMERCIAL BANKS**

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## DECLARATION

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

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Despite all this able assistance, I accept full responsibility for any flaws in the writing of this paper. It has been a joy to craft it and I hope it will help to advance the field of growth banking sector.

## **DEDICATION**

I dedicate this paper to my son Aiden Njoroge; you've been my source of motivation and inspiration since you were born. Love you so much. I also want to dedicate this paper to my parents, Julius Njoroge and Faith Njoroge for their good care and support over the years. Their sacrifice, advice and guidance have made me who I am today. Dad and mum I will forever be indebted to you. My siblings Christopher Njoroge and Hellen Njoroge, I also appreciate your love, support and encouragement in my life especially during this period when I was doing my Research work.

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## ABBREVIATIONS

|              |   |
|--------------|---|
| <b>CBK:</b>  | Central Bank of Kenya                       |
| <b>CBR:</b>  | Central Bank Rate                           |
| <b>GDP:</b>  | Gross Domestic Product                      |
| <b>MD:</b>   | Money demanded                              |
| <b>r:</b>    | Interest rate                               |
| <b>SPSS:</b> | Statistical Package for the Social Sciences |
| <b>Y:</b>    | Level of income                             |

## **ABSTRACT**

Despite the importance of interest rate in influencing financial intermediation in an economy there is no consensus on whether a high interest rate or low interest is crucial for the functioning of the banking sector? On 14<sup>th</sup> September 2016, interest rate capping came into effect by passing changes in the banking act by the Kenyan Government. Interest rate capping was on both lending and deposits interest rates; this was an effort to tame commercial banks that were charging interest so as to influencing demand and supply of credit to the private sector. However, the dynamics between interest rates capping and supply of credit has not fully been researched in Kenya. The objective of this study is to establish the influence of interest rate capping on supply of credit by Kenyan Commercial Banks. The literature review looks at past theories and studies done on similar topics. This study uses a descriptive research design. Descriptive design is preferred because the study will use quantitative statistical data to describe the relationship between interest rates and supply of commercial banks credit in Kenya as exists at the time of carrying this research. The target population is the total average of all commercial banks in Kenya. The total commercial banks credit and the interest rates before and after capping will be collected through secondary data. The study covers the monthly data for one year period before and one year after interest rates capping. Descriptive statistics such as mean was used to describe the data. Other diagnostics tests that were carried out on the data are normality test and correlation analysis. Regression analysis and Pearson Product-Moment Correlation Analysis were be used to show and measure the relationship between interest rates capping and commercial bank credit supply. In conclusion, it is evident that the effects of the lending and deposit interest rates capping are significant in the determination of credit supply by Kenyan Commercial Banks in the Kenyan economy. The recommendation is that the right mix of rates that is both the lending rate and deposit rate needs to be implemented to ensure both consumers and credit suppliers do not suffer adversely. All stakeholders should be involved in this process. There is therefore need to enhance policies to ensure consumer protection in the market.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

The banking segment credit to private sector would be a very good stimulus for economic development in for a Kenya given that the Country has gone through several stages of development after the change of economic and political regimes. The cost of credit namely interest rate is crucial in the efficient allocation of investible funds, effective domestic resource mobilization and the achieving of major macroeconomic objectives. Indeed, interest rate has remained an important tool of monetary policy as it has direct effects on macro-economic variables. They affect exchange rate, capital movement inflation as well as influencing business conditions and economic activity. Thus, interest rate arouses a great deal of public attention changes in their general pattern have widespread repercussion on individual families, business and government. Interest rate affects decisions to spend and save. Business depends on whether to build a new factory depends on the relationship amid the interest rate and the expected return's rate. Government decisions are based on the proportion of its budget to be financed by borrowing which is affected by the interest rate.

McKinnon (1973) and Shaw (1973) speculated that low real interest rate reduces the availability of credit for investments since it is a disincentive to savings. Thus, rates of interest need to be determined by the forces of supply and demand. This way, nominal plus real interest rates will give surplus savings mobilization, thus deepening the demand and supply of credit i.e., financial intermediation process. However, Stiglitz and Weiss (1981) advanced the modern view of interest rates which depicted that at high interest rates, financial intermediaries might resort to non-price mechanisms such as credit

rationing to allocate funds due to the problem of information asymmetry, a situation which will further fragment the financial market.

Despite the importance of interest rate in influencing financial intermediation in an economy there is no consensus on whether is high interest rate or low interest that is crucial for the functioning of the banking sector? Therefore, the need to establish the how capping of the interest rates will affect the supply of credit by commercial banks in Kenya.

### **1.1.1 Interest Rates**

According to classical economists such as Keynes (1936) interest rates as the aspect which balances both the desire to save and demand for investments. The savings represents supply while demanded investable resources are represented by investments. Interest rate is the “price” resources available for investments. To commercial banks, deposit interest rate is as a result of the incentive paid to investors for creating extra funds accessible to financial mediators while the rate of interest is the cost of capital incurred by borrowers for using funds for investment. The other variable is the loans ‘cost which is constituted by bank lending rates of interest and it influences the supply for credit (Friedman and Kuttner, 1991). Even though there is agreement on the use of lending rates of the bank as an argument in supply for model of credit, some studies have argued that the opportunity cost of bank loans should be a reference point to consider the cost of loans.

### **1.1.2 Supply of Commercial Banks Credit**

The Banks credit to sectors owned privately bridges the gap between the financial assets of businesses and financial requirements of businesses (Das and Ghosh, 2005). Cao and Illing (2015), they categorized the demand for credit as follows revealed, potential and perceived demand for credit. Exposed demand is shown as an application written for financial support at a given interest rate. Desire for credit is characterizes the potential demand which is not actualized due to market inadequacies and barriers of institutions apparent demand for credit is characterized by a circumstance whereby businesses that mention finance as the limitation assume to be in need of cash.

There are a number of theories of the demand for assets that can be used to model and define the demand for credit to the private sector. These theories are transaction, precautionary and portfolio model, According to Maimbo et al, (2014). although at the hypothetical level studies of supply and demand for credit contain an economic action adaptable such as financing cost which is (bank lending rates) in this context, real GDP, and the expected inflation, there is no agreement done in previous studies with regards to how credit supply is affected by economic activities. That said, some practical findings confirm that there is positive correlation between demand for credit and economic activity grounded on theoretical foundation that durable economic development would have a good effect on anticipated company profits and incomes. Makkar and Singh (2013) argue that economic growth offers agents of private sector appetitive for higher levels of consequently and indebtedness, to finance higher investments and consumptions through credit. During the economic booms time, we find that businesses intense to

expand their consumers and output are keen to use in expectation of rising incomes, high demand for bank loans is likely to culminate in this situation.

### **1.1.3 Interest Rate Capping and Supply of Credit by Commercial Banks**

There is divided view on the relationship between supply of credit and the cost of loan that is interest rate. We have researchers and authors that claim that the correlation is negative such as Weiss, (1981): Stiglitz (1993): and Besley, (1994) others considered it unbiased. Individuals who concur with the bad association between the interest rate and demand for credit recommend that there is a negative effect of demand for credit when interest rates are high because it leads to very few borrowers with high risky projects satisfied. Individuals who hold this opinion are Stiglitz and Weiss (1981), Stiglitz (1993) and Besley (1994). Their dispute depends on maximum rates of interest usually support antagonistic variety of people seeking loans. The approved loans are risky since they appear similar to the high rates of default.

Fry (1995) brought out the modern view of the rate of interest based on asymmetrical data. By introducing imperfect information and expanding the classical theory of interest rates, they claim that due to the presence of credit restricting brought about by asymmetry information, the rate of interest may not equilibrate demand and credit supply. The classical outlook of the rate of interest states that in case there is higher demand for loans at any given rate of interest, prices will rise to obstruct off the surplus demand. Higher interest rates would increase the financier's return if they did not raise his risk by raising the likelihood of default. However, at some point the increased rates of interest causes a higher risk and hence the higher possibility of default which offset the loan portfolio to

increased interest rates. Thus, contrary to the theory that excess demand for credit imposes an increase in the rate of interest to achieve equilibrium, the interest rate may remain unaffected even in the face of surplus demand in markets with defective information.

#### **1.1.4 Commercial Banks in Kenya and Interest Capping**

Commercial Banks and Mortgage Finance Institutions in Kenya are regulated and licensed by Banking Act together with its provisions and the Prudential and Regulations Guidelines issued by the Government of Kenya. Commercial banking institutions are the main actors in the Kenyan Banking system hence they are scrutinized to confirm that they abide by the regulations and laws of the country. As at 31<sup>st</sup>December 2016, the Kenyan banking sector comprised of the Central Bank of Kenya, as the regulatory authority, 43 banking institutions (42) commercial banks and 1 mortgage finance company), Out of the 43 banking institutions, 40 were privately owned while the Kenya Government had majority ownership in 3 institutions. Of the 40 privately owned banks, 25 were locally owned (the controlling shareholders are domiciled in Kenya) while 15 were foreign-owned (many having minority shareholding). The 25 locally owned institutions comprised 24 commercial banks and 1 mortgage financial institution. Of the 15 foreign-owned institutions, all commercial banks, 11 were local subsidiaries of foreign banks while 4 were branches of foreign banks.

Interest capping refers to a ceiling placed on interest rates. It dictates the maximum rate that a bank can charge its customers on loans. In Kenya it is currently pegged on 4% above the CBR current at 10%.The issue of interest rates capping has also been

introduced severally in Kenya with different outcomes. In 2000, the Donde Bill, (named after its mover, Member of Parliament, Joe Donde) tried to address the issue of interest rates but did not get much support from stakeholders including banks. The draft laws aimed to have the government regulate the amount charged on loans by financial institutions since the banks had made borrowing not reachable for the majority of Kenyans. Mr Donde argued that as banks moved in to auction their assets majority of businesses were going down when they were unable to service their loans due to the increased rates. He proposed that the interest rates be fixed on the 91-day treasury bills with a margin of 4%. Players industries in the country with the exception of banks applauded the bill, citing that it would form part of recovery efforts which was needed to kick start the economy in the country. The government, in a memorandum to parliament, however cautioned the legislators on the dangers of controlling interest rates and cited that such a move would be in contrary to the spirit of the liberalization policy of the economy in Kenya. There was also an argument between Mr. Donde and the government on the requirement that committee which would be comprised of nine men be formed to oversee formulation and implementation of monetary policy. The government's amendment proposed the committee be comprised of 10 members who were to include the central bank governor, the deputy governor, the chief economist and seven other members, of whom two had, are women. The committee was also supposed to change its role to be more of advisory rather than just being proactive.

In 2015, there were fresh attempts to cap bank interest rates through a proposal made by the Kiambu Member of Parliament Hon. Jude Njomo. The bill was finally assented by President Uhuru Kenyatta on the 24th August 2016. The Bill which commenced on 14<sup>th</sup>



September 2016 sought to amend section 33A of the Banking Act by introducing a new section (section 33B) which provides for interest ceilings, giving a warning to the borrowers to be aware of the interest they receive on their deposits and repercussions to all financial institutions that carry out the function of lending on providing interest rates higher than those set by the law. Section 33B (1) (b) of the Banking Amendment Bill also said that any Kenyan with a savings account in a bank will receive a predetermined interest rate on the deposit with the reference rate being the Central Bank rate (CBR).

The clause set the minimum interest rate that a bank would pay for a savings deposit at 70% of the base rate set by the Central Bank of Kenya. This is to mean that with a CBR of 10%, the minimum amount of interest payable for a savings account is 7% and the maximum interest charged on loans is 14%, which is 400 basis points above the CBR. The legislations main aim is to restrict banking institutions from setting very high and very low interest rates on loans and deposits respectively. Specifically, the law prescribes that no banking institution that issues a loan would charge an interest rate that is more than 400 basis points above a base rate set by the Central Bank of Kenya. For the bank client who is seeking a loan, it is now possible to predict the maximum interest on a loan to be provided using the base rate as would be declared by the Central Bank.

## **1.2 Research Problem**

Kenyan Government capped both lending and deposit interest rates in effort to tame commercial banks who were changing interest and well as to influencing demand and supply of credit to private sector. However, the dynamics between interest rates capping and supply of credit has not been fully researched in Kenya. This topic has generated a

lot of discussions; however, no conclusive empirical agreement on how interest rates may affect supply of credit by commercial banks in Kenya.

There are two viewpoints of bank credit namely the demand side which include individuals or firms access to credit and the supply side like financial mediators like banks. As with any new regulation, there are various stakeholders that are affected, either positively or negatively. The effect of capping interest rates most stakeholders focused on the effects this would have on the end consumer of bank products that is the customers. The Existing and potential customers of commercial banks who use bank credit were bound to be affected by the new law. While most study studies have concentrated on demand side of credit market there are little studies on supply side of the market. Therefore, the need to identified the supply side effects of capping interest rates on the credit supply

Studies done by past researchers(Afzal and Mirza (2010); Qayyum (2002); Awan (2009); Khawaja (2007); and Ali et al., (2011)) on interest rates capping on lending reveals that it is very crucial to identify the effects of capping on bank credit particularly from the bank side. The studies concentrate on demand side; however, there is study done in view of the supply side variables of bank credit in Kenya and the region as a whole. These studies concluded that interest capping is positive correlation with credit on demand side and that capping increased demand of credit by consumers.

Looking at this development of capping interest rates and the importance of bank credit to support economic growth and development to the private sector, a central question arises naturally: what is the effects (positive or negative) does the capping of interest

rates has on banks credit supply to the private sector? It is precisely this reason that prompt undertaking of this study, to identify the correlation between interest rates capping and Kenyan supply of commercial banks' credits.

### **1.3 Objective of the Study**

The objective in this research is to establish a relationship between supply of credit by commercial banks in Kenya and the interest rate capping.

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

As a regulator, CBK, it will provide evidence that would serve as important quantitative information into the cauldron of policy. The findings can help CBK to come up with policies to protect investors and promote market growth. By helping to promote commercial banks performance and the protection of consumer interest including private sector which encourages investment and banking sector development, which is associated with improved macroeconomic growth. The study will provide a better guide to Government policy makers in drawing policy recommendations that are appropriate for the financial sector.

Over the years, economist have generally acknowledged the importance of the interest rates policies as a technique for demand management in order to attain both external and internal balance as well as guarantying efficient distribution of financial properties in an economy interest rate has an important role in an economy as it is not only the price of money borrowed /lent and a return on investment, but also an important instrument of monetary policy.

To commercial banks the evidence of this work can help them to price the money they lend to private sector and hence protect their investment. This is because interest rate has an important role in growth of commercial banks as it is not only the price of money borrowed/lent but also a return on investment.

To the academicians it would be my joy that this study adds to the existing group of empirical literature on interest rates, bank credit and private sector growth. First, linking interest rates to the supply for credit will provide basis for comparison of the McKinnon and Shaw theoretical framework and that of their critics. Hence, the existing body of knowledge is contributed by the study on this topic and also make recommendations arising from its findings for further research on this or other related areas of study.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This section looks at the theories relating to interest rate and empirical literature on interest rates as well as their effects to the study. It also shows and outlines material from other previous researchers who carried out their research in the identical area of the same area. By the end of this chapter we shall see the summarized empirical and theoretical relationship and also those gaps to be researched on.

### **2.2 Theoretical Framework**

This section looks on the theoretical framework supported by different authors' various theories of supply of credits and the views on interest rates.

#### **2.2.1 Liquidity Preference Theory**

Liquidity Preference Theory by Keynes (1936) looks at the demand/supply of the stock of money in the financial system through interest rates. In his approach, Keynes stated the function of income and interest rates can be used to get demand for money. The model is as follows  $MD=(Y, r)$  where: MD = money demanded: Y =Level of income r = interest rate. This theory shows interaction of demand and supply of money where stock regulates the interest rate. Keynes (1936) stated the following motives when money is demand; speculative, transaction and precautionary motive. He also indicated that investors will be more inclined to choose short term securities to long term securities.

This is done by encouraging them to embrace long term bonds and hence higher interest is yielded by long term securities than short term bonds. Thus, the yield curve will at all times be upward sloping. This is based on, all other factors being equal, people choose to

hold on to cash (liquidity) and that they will demand a premium for investing in non-liquid assets such as stocks, bonds and real estate. The theory suggests that the term for getting the cash back increases as the premium demanded for parting with cash raises.

Howels and Bain (2007), tell us an improved inclination for liquidity in the model is the same as to raise demand for money and hence demand for money increases wherever a larger group of people think that the interest rates are likely to hike than believes they are likely to go down. Thus the study seeks to identify the rationale of the liquidity inclination theory on the relationship between the financial performance of the financier and money supply in form of loans by commercial banks in times of rising and or falling lending rate. On the contrary, borrowers will only capitalise where the returns on their investment profile exceed the rates of borrowing.

The suggestion of the theory is that, different financial institutions have different liquidity, when the theory is applied, banks with huge liquidity should charge low interest rate on lending in order to draw more borrowers and rate of interest on savings should be low in order to depress savings or if it charges the same rate as other financial institutions on cash borrowed then the rate of interest on saving should remain minimal. Thus, the spread on rate of interest on banks which prefer liquidity should be relatively more than those that don't prefer liquidity. The performance of the finance of low liquid bank compared to high liquid bank should be better (Barber and Odean, 2011).

### **2.2.2 Financial Liberalization Theory**

Theory of financial liberalization stems back from McKinnon (1973) and Shaw (1973), who attributes economic development in developing countries to financial liberalization. The duo said that liberalization of finance is the removal of a series of hindrances in the monetary sector in order to fetch it in line with that of the advanced economies. There are three forms of financial liberalization. First, this term can be used to describe domestic financial sector reforms such as privatization and rise in credit expansion to the private sector.

McKinnon (1973) argues that financial liberalization is a necessary ingredient in the generation of high saving rates and investment. Shaw (1973) further argues that the subsequent real growth in the financial institutions provides domestic investors with the incentive to borrow and save, thus enabling them to accumulate more equity thereby lowering the cost of borrowing. This theory suggests that the administrative control by the government of financial markets distorts rate of interest hence dropping it. The effect of this is that consumption is encouraged, the quantity of investment is crippled and savings is discouraged.

It serves as a solution to financial constraints in economically suppressed economies. Achy (2003) said that in a financially repressed government, the financial authorities impose high reserve necessities, mandatory holding of treasury bonds and bills issued by the government, and finally a capping of interest and bank specific credit ceilings and selective credit allocation.

### **2.2.3 Loanable Funds Theory of Interest Rates**

The loanable funds theory of rates of interest was originated by Ohlin (1937). The theory indicates that rates of interest are determined by the supply and demand of loanable funds. With this respect, this theory is broader and realistic than the traditional theory of interest. In his theory Ohlin attempted to improvement on the standard theory of interest by recognizing that currency play an intermediary role in investment and saving processes and this can cause disparities in the level of income. Thus, he introduced financial approach to the conventional theory of interest.

The loanable funds theory argues that, interest rate is the price that equates the supply and demand of loanable funds. Therefore, the stability point where supply equals demand of funds available for loans both borrowers/investors and savers are contented with the outcome. However, variations either in the supply of funds or demand for loans available may cause fluctuations in the interest rate. (Turnovsky, 1985) termed loanable funds as the sums of money supplied and demanded at any time in the money market. He said that the funds available for lending and the supply of credit would be subjective by the savings people make and the additions to the currency supply in a given period. The demand side of the loanable cash would be determined by the demand for hoarding money plus demand for investments. The Loanable fund theory has suggestion on banks borrowers and savers (Emmanuelle, 2003). He said that at equilibrium point both borrowers and savers are well compensated.



#### **2.2.4 The Rational Expectations Theory of Interest Rates**

The theory of rational expectations of interest rates is built on the assumptions that all the information that is available in the market is what is used by people to formulate expectations (Bekaert, 1998). The theory underscores that assessment for future rates of rates is the changes in current interest rates which are mainly caused by unforeseen information and shifts in economic factors. The rational expectations theory can be combined with the loanable funds theory to give better consideration on the existing information within the economy.

Restraining factors of rational expectation theory are frequently linked to the struggle of collecting data and knowhow of how uses of the public gathered material to form their prospects (Caplan, 2000). Thus people avoid borrowing if their expectation is that interest the rate will which may affect the banks routine due to reduced earning on rates of interest. On the contrary, if people are on view that the rates of interest will drip they would be ready to borrow. This will as a result improve banks performance due to growth in interest rate earning.

### **2.3 Determinants of Supply of Credit by Commercial Banks**

This section reviews main determinants of credit supply by commercial;

#### **2.3.1 Interest Rates**

Interest rates have a direct effect on the activities of commercial banks because of the strong belief that they affect the total credit by banks (Priti, 2016). He said that the difference between the interests paid to deposits and savers and the interests paid by

borrowers is the interest earned by banks. A steep yield curve means the commercial banks are generating high interests.

Zaman *et al.*, (2013) did a study to determine the effect on the rate of interest on the credit supply of commercial banks in Pakistan. A sample of 20 banks operating in Pakistan and listed in Karachi Stock formed the study. The study established that the interest rate (a key tool of financial policy), has a substantial impact on the credit supply of banks. An increase in interest rates causes a higher lending rate more than the deposit rate, which results in profit because the bank spread is high. A reduction in the interest rate causes the deposit rate to move faster than the lending rate, which keeps the bank spread low.

Melitz and Pardue (2014) who in their investigation distinguished condition of supply for advances utilizing relapse examination for the period 2001-2012 on quarterly information, they describe a supply of credits as the present estimation of advances gave by banks. The creators considered the financing cost of bank advances, particularly here and now business advances and their rates of stores for the determinants of credit supply. Creators reasoned that, a positive connection between the financing cost of here and now business advances, offering advances and the loan fee of stores was recorded.

Laffont and Garcia (1977) evaluated the model of interest and supply for business credits in the Canada's market on month to month information for the period 1965 to 1975. They utilized the minimum squares technique as their mean to discover which determinants influencing free market activity for advances. They evaluated the supply of credit

utilizing the accompanying factors that is financing cost on stores of the bank as the value distinction between the loan fee long haul advances and the financing cost of government bonds, the necessities for least hold prerequisites. The creators found that these factors are factually noteworthy and the credit supply has positive effect fundamental rates of enthusiasm from advances, stores at locate, terms store and the list of mechanical creation. Alternately, there was a recorded negative effect between the between the financing cost of securities from government and the supply of credit, rates of enthusiasm on long haul advances, the distinction between the essential rate of enthusiasm on advances and the store rate.

### **2.3.2 Inflation**

Martin (1990) attempted to recognize the determinants influencing supply for advances and gauge supply of credit utilizing non-harmony model of corporate advances in the United Kingdom. The information for this examination was on a quarterly premise from 1984 to 1989. The creator utilized the past level of getting, cash supply, genuine loan fee and expansion for determinants impacting the supply of credit. The creator reasons that the supply of credit decidedly influences swelling and the genuine financing cost. Negative effect on layaway supply has past levels of acquiring and cash supply.

Agunget et al., (2001) utilizing a board relapse examination for the period 1994 to 2000 analyzed the determinants of supply for credits. Supply of credit is resolved by the creators of the loaning limit of banks, which incorporates add up to liabilities aggregated by the required capital stores of banks, expansion and money and money close by. The outcomes propose that the supply of credit has a positive impact loaning limit, swelling

and the financing cost on advances and the proportion of cash-flow to resources. They likewise express that extraordinary credits have a negative impact to money related establishments.

### **2.3.3 Money Deposits**

Baek et al., (2005) assessed a condition of supply for credits utilizing non-harmony demonstrate. Time arrangement cover the period from January 1992 to June 2015 in India banks. The supply of advances is depicted as the real volume of advances gave by business banks. Add up to stores, least hold necessities and the modern creation list were considered. The investigation comes about demonstrate that base save prerequisites, add up to stores and the list of mechanical creation positively affect the supply of credit.

Erdogan and Senftleben (2009) inspected the aggregate credit supply in Germany utilizing technique for greatest probability to gauge supply for advances. The information was examined utilizing time arrangement information framed in light of a quarterly premise, particularly from 2000 to 2010. As indicated by the creators, supply of credit is resolved the credit limit of the banks, the financing cost on advances allowed and expected swelling. The loaning limit of banks was indicated as the total of time stores, request stores and aggregate capital. The creators reasoned that keeping money organizations increment the supply of credit in case of higher loaning limit. On account of swelling, which prompts higher financial dangers, banks offer less advances. In case of rising financing costs of advances, this is expands the gainfulness of banks, which are then ready to give a bigger volume of advances.

Stavárek and Vodová (2010) examined the determinants that influence the measure of advances conceded in the Czech Republic. Utilizing co incorporation investigation evaluated request and supply balance relationship utilizing information from (1994 to 2007) which is quarterly. Among the determinants that influence the supply of credits to banks considered the accessible assets, particularly loaning limit, which incorporates stores, reserves picked up from the between bank issue obligation securities or market. The creators exhibited the positive effect of loaning limit intermediary by cash stores on loaning volume.

#### **2.3.4 Capitalization of Banks**

Jimenez et al. (2012) looked answers to inquiries regarding how bank variables' influencing the supply of credit by utilizing the minimum squares technique for the period February 2002 to June 2010. The supply of advances creators describes as loaning volume. Managing an account factors included capital computed as proportion of money to banks add up to resources, liquidity ascertained as proportion of fluid properties to banks add up to resources and profit for resources and yearly difference in resources. The examination comes about recommend that the supply of credit has a positive impact return on resources of the managing an account segment, the yearly change in the aggregate resources of the keeping money segment, the proportion of possess assets to add up to resources. Negative effect on the supply of credit has here and now financing cost, the proportion of cash-flow to whole resources of banks and proportion of fluid advantages for whole resources of banks.

Stavárek and Vodová (2010) utilizing non-harmony display inspected the adjustments popular for advances and advance supply in the Czech Republic on quarterly data from 1994 to 2007. Among the elements influencing supply of credit expansion incorporated, the aggregate volume of stores the GDP at current costs and bank capital figured as offer capital, held income or misfortune and pick up or misfortune in the present time frame. The needy variable was characterized as the whole volume of credits allowed to the two out-of-state people and occupants. For stores, capital and loaning limit has been demonstrated that the development of assets accessible for loaning will cause development of supply of advances.

### **2.3.5 Government Regulation**

Unanticipated changes in government regulation of interest rates affect the decisions made by investors in a positive or negative manner. A change in the ceiling interest rate pushed investors and other financial institutions to forecast the effect on future cash flows, which affects stock valuation (Koch, 2015). Nkwoma (2014) established that deregulation of interest rates in the Nigerian bank sector increased bank lending, which meant a high-profit margin for the banks. However, NKwoma (2014) and Zaman, et al. (2013), caution against the lack of regulation to prevent banks from engaging in very risky ventures that might compromise their liquidity.

Government regulation is not limited to the fluctuation of the interest rates because in some cases the government can step in to provide liquidation cash to protect banks. Norden et al., (2013) conducted a study to understand the impact that government intervention on the US stock performance during the financial crisis. The provision of

bank capital by the government had a positive impact on the performance of borrowing companies. Other study by Correa et al., (2014) fail to account for other events that might have occurred during the same time that the interest ceilings were introduced in the economy. The implicit assumption that the interest ceiling is not the only factor that can tamper with the results, this is because it is not a reflection of the practical reality. Some periods are characterized by major macroeconomic events and some regulatory changes. The examination of prediction errors fails to account for all changes that might occur before the end. The effect of other informational events should be considered to understand

#### **2.4 Empirical Literature**

Munir, Awan and Hussain (2010) in Pakistan using Error Correction Method and Co-integration test to investigate the annual time series data for the period 1973-2007, looked at the correlation between long and short run variables among investment, the real rate of interest on bank deposits, savings plus credit from the bank to the private segment, real rate of interest on bank deposits conveyed with the effects of monetary liberalization on key valuables of macroeconomic. In the test, financial liberalization took the value 0 for non-liberalization years (1973 – 1989) and number one value for the ages of liberalization that is (1990 – 2007). Their outcomes show that monetary liberalization was a negative effect on private investment and private credit due to rates of interest being negative for some years due to a high rate of inflation in Pakistan. Study also pointed out that there would be more need for the de-regulation of interest rate so that the spirit of saving could be prepared to promote capital development which leads to

economic progress. The Evidence was strongly favored McKinnon-show hypothesis which portrayed that monetary liberalization made no significant impact.

Chowdhury (2001) empirical study of Bangladesh on supply of private loans recommends that real interest rates and financial private borrowings show a negative relationship during post and pre reform period. The study using the time series econometric technique, showed regress in private borrowing on real interest rate and several explanatory variables. We can give an example of dependency ratio, financial liberalization index, share of agriculture in GDP and ratio of public borrowing to gross national disposable income calculated as  $(\text{domestic investment}) + (\text{current account surplus}) - (\text{public savings})$ .

Black et al., (1997) study on imposition of interest rate capping indicates that when the government puts ceilings on interest rate, the markets demand and supply does not interrelate freely. The reason is because when the government puts a ceiling on interest rates, the movement of resources is not changed if the equilibrium price is overhead. This results to limited access of credit to poor people due to their incomplete qualifications which are required by the banks. This means the clients with low income will have to shift to the informal economy since they cannot obtain loans from the bank. The impact of increase in interest rate on the supply of credit indicates that since commercial banks lack incentives to increase loans supply, thus, this causes shortage in supply of credit in the market.” Other suppliers may decide to abandon the market so that the supply curve may shift inside hence creating a shortage that will become sharp” which will at the end mean credit consumption raises (Black et al., 1997).



Achy (2003) did a regression analysis across five countries to analyze the consequences of financial liberalization on economic growth, savings and investments. An ideal was done on five MENA countries which were (Egypt, Jordan, Morocco, Tunisia and Turkey). This study was done on the period 1970 – 1998. In order to examine its influence on growth, the projected growth equation relates actual GDP to a set of financial depth measures, private investment rate, real exchange rate overvaluation, external debt/GDP ratio, real interest rate and annual change of terms of trade, all aimed for financial liberalization. This study used a method which allows each country to have its own intercept. The method is called Fixed-Effects Estimation. The findings of the study propose that monetary liberalization has led to further alteration of credit distribution in favor of consumption at the expense of productive activities. This is because the financial depth pointers fail to explain growth experience in the study countries. The study also shows that financial liberalization is actually in line with the hostile financial development and Keynesian view.

Hualan (2011) study the effects of monetary liberalization on Thai firms and finds that financial liberalization decreases the cost of borrowing as it lowers interest rate spreads and requirements on loan collateral. These results are not surprising, because at the time of the study, the Thai economy was dominated largely by commercial banks. They went on to suggest that higher rates of interest rates brought about by liberalization causes a higher level of investment and economic growth and more efficient distribution of resources, the main aim of liberalization has been to substitute the severely forced “control and command” system with a comparatively liberalized government with prices

showing economic costs, along with a huge reliance on the private segment as the instrument of growth (Bhaduri, 2005).

Classical economist on the other hand is majorly focused on the interest rate since this will determine the future (Olusoji, 2003). He argued that the interest rate determined borrowing and saving rate. He said that government intervention on rates of interest increasing and sectorial distribution of credits generated highly concentrated market organization leading to monopolistic and/or oligopolistic inclinations which might promote other inefficiencies caused by distortions in the economy.

In Nigeria between 1970 and 1985, Agu (1988) went over the determinant and structure of real rates of interest. In his research, there are several negative impacts of low interests to the company since this will drastically lead to its collapse. Other study on Sri Lanka by Nicholas, (2008) finds an inverse relationship between domestic private borrowing rates and real deposit rates of interest. The author prefers aggregate borrowing to private borrowing as dependent variable since it cannot be assumed state borrowing responds positively to real changes of interest rate.

Zaman et al., (2013) carried out a study to determine the effect of interest rate on the cost-effectiveness of major banks based in Pakistan. Sample of 20 banks operating in Pakistan and registered in Karachi Stock formed the study. The study design was cross-sectional, and the data sources included the indexed Karachi stocks based on return, audited financial reports of the banks, publications of the State Bank of Pakistan, Press publications, and media reports. The outcome of the study confirmed that interest rate, deposit with the other banks, investment, and loans. It was established that the interest

rate (a key tool of financial policy) has an important impact on the profitability of banks. An increase in interest rates causes a higher lending rate more than the deposit rate, which results in profit because the bank spread is high. A reduction in the interest rate causes the deposit rate to move faster than the lending rate, which keeps the bank spread low.

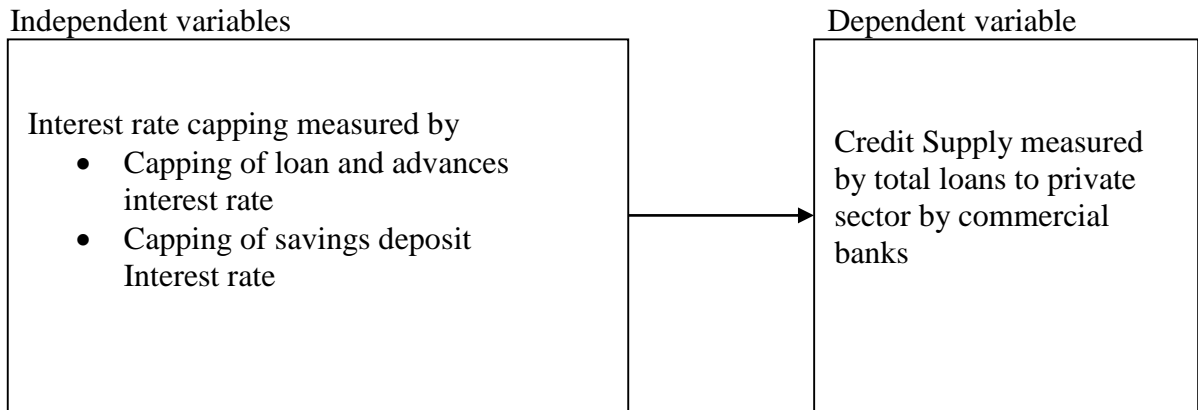
## **2.5 Conceptual Framework**

According to Oxford Dictionary of Economics (2003) Interest rates are viewed as the additional payment per item of the loan. Jhingan (2005) noted that rates of interest accomplish a limiting function through allotting a limited supply of credit all through the several competing demands. He said the rate interest is price for the application of credit by the debtors and the getting it back to the lender for finalization. According to Glossary (2010) interest rates capping has to do away with market forces that regulate the rate at which cash is borrowed and lent.

Stiglitz and Weiss (1981) advanced arguments against high interest rates. They pointed out that attempt to charge higher interest rate negatively affects the quality of a bank's loan because of two effects: incentive and adverse selection effects. First, it raises the overall riskiness of the portfolio of assets. Rising interest rates reduces the returns on all projects and makes less risky projects unprofitable (incentive effect). This makes firms switch to more risky projects as interest rates rise. Secondly, banks have to screen borrowers. This is because at a high borrowing interest rate, borrowers may be less worried about the prospect of non-payment (adverse selection effect). This implies that the rational profit maximizing bank will practice credit rationing which defeats the

assumption generally made in financial liberalization literature, that of interest rate liberalization eliminating credit rationing.

**Figure 2.1: Conceptual Framework**



Where:

$CC$  = Total commercial banks credit

$Sr$  = saving deposits interest rates

$Lr$  = Loans and advances interest rates

$Dy$  = Dummy variable to capture before and after interest rate capping

$e_i$  = Error term

## 2.6 Summary of Literature and Knowledge Gap

This chapter has discussed the theories of interest rates and implications of interest rates capping in banking sector. Theories reviewed shows that supply and demand of funds are the determinants of interest rates, however, the expectancy of the two parties have a role they play to the business. Banks plays an intermediary role with a profit motive. Borrowers need not to be exploited as their look money for their investment while savers anticipate to be refunded at the same time. At the equilibrium point where demand

equates supply of funds borrowers and savers need to be happy with no one feeling exploited.

Literature is split with the arguments for and against interest capping. Counter arguments regarding the imperative for interest capping provide conflicting evidence that interest capping leads to credit constraints and vice versa. In spite of this lack of consistent evidence, several recommendations are made on the conditions for successful interest deregulation. Some of these recommendations include effective supervision of commercial banks, price stability, fiscal discipline that is enhanced by sustainable domestic borrowing, adequate competition by commercial banks in a profit-maximising environment, institutional development, macroeconomic stability and a non-discriminatory tax system on financial intermediaries.

There are several reasons why governments may opt to use interest rate caps, most of which are political and economic. One of them could be to support an industry or sector where there is a flop in the market or in areas where a bigger economic resource is needed. Market flops are usually a result of market information disproportionateness, moral hazards, adverse selections or the inability of the monetary institutions to determine the difference between high risk and the low risk clients. Therefore, according to Miller (2013), interest rate caps are useful tools used to support a sector until it's able to sustain itself.

Since the capping of interest rates has a tendency to distort the market and cause adverse biases, financial institutions tend to favour their lending to low risk clients which in turn leads to inefficiencies in the financial intermediation process. According to Ramsay

(2010), this discrimination leads to a situation where those in dire need of financial assistance being locked out of the available finances because they are considered high risk. Interest rate restrictions brought by the capping may lead into alternative lending by the financial sectors. As such as banks may up lending to the government and in extreme cases banks may withdraw from some markets such in rural areas where the capping may lead to unprofitable making banks unable cover their costs. This scenario in turn leads the low income, high-risk borrowers to turn to shylocks and other unlicensed money lenders for funding and too often these loans come at a very high cost.

There is no conclusive evidence on impact of interest rate capping on banking segment. When President Uhuru Kenyatta assented the bill into law of capping interest rates at 400 basis points above the CBR rate which currently stands at 10%, commercial banks focused on the effects this would have on their bottom lines with reference to consumer of credit. Thus, little attention was paid on how this new law would affect the supply of credit. Therefore, this study seeks to fill this gap.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

Research is a definition of a problem and formulation of possible solutions through data collection and analysis. Research methodology defines the platform where facts are generated in clearly and meaningful manner. In this chapter, methodology to be used to conduct the study is outlined.

### **3.2 Research Design**

Cooper and Emory (1995) describe research design as a strategy, structure and plan conceived in order to obtain solutions to the various research problems. It provides a framework for planning and conducting a study. A research design discloses the research question and the strategy for investigation to be used to acquire first-hand evidence on matters of the stated problem (Cooper & Schindler, 2003). This study uses a descriptive research design. Descriptive design is preferred because the study will use quantitative statistical data to describe the relationship between interest rates and supply of commercial banks credit in Kenya as exists at the time of carrying this research.

### **3.3 Population of the Study**

Cooper and Emory (1995) describe population to be the assortment of components to which the researcher wants to draw out some reasoning. Component can be described as the matter on which the measurement will be taken and it hence the unit of study. The target population that is of interest in this research entails the average of all 43 commercial banks in Kenya. The study covers the one year period before and one year after interest rates capping. The interest capping was introduced in September 2016.

### **3.4 Sampling Design**

Sampling design is the rationale to be used in determining who and the number of individuals to interview, how many and what events to take note of or how many and what records to scrutinize. The basic idea of sampling is picking out the part of the component in the population. The eventual sample's test of a sample design is how good it characterizes the features of the population from which it was drawn from. Also, a good sample should be acceptable by being accurate and precise. This study focuses on the average of all commercial banks in Kenya. Hence, the study is census sampling covering all commercial banks.

### **3.5 Data Collection Methods**

Flick (1998) describes data collection as the process of taking first-hand evidence with the aim of gaining insights about a particular situation as well as answering questions of the research. The major types of the collected data are secondary and primary. Primary data can be defined as the first-hand information given by respondent. Secondary data on the hand is data that has already been gathered and passed on through various statistical processes (Chandran, 2003). The study will utilize secondary data to analysis the relationship between interest rates capping and credit supply. Commercial banks' loans and advances interest rate (Nominal).A data collection guide was prepared to guide data gathering.

Secondary data will be obtained from financial statements of the Central Bank of Kenya. The data will include commercial banks' nominal interest rates including loans and advances and savings deposits. Also total commercial banks credit to private sector



(including other public bodies) will be collected. The study covers the monthly data for one year period before and one year after interest rates capping. These data will be obtained at the end of each month over the study period. The interest capping was introduced on 14th September 2016. A data collection guide (Appendices: Table 1) will be used as a guide for data collection.

### **3.6 Validity and Reliability**

There are several ethical issues, which must always be considered when planning any type of data collection. Data collections are even more resource intensive and if not properly planned can fail to attain laid down objectives or violate laws, rights and privacy of respondents or any other interested party. Mugenda and Mugenda (2003) says that as a researcher we should be cautious in order to avoid causing any form of harm to the respondents for example through asking of unrelated and embarrassing queries, use of intimidating language or causing nervousness to the respondents. They argue ethical considerations like anonymity confidentiality, as well as evasion from deception are vital matters in social research.

Since this study will use secondary data, the validity and reliability of data collection instruments is not necessary. However, for this study's purpose, the researcher will seek permission from authorities and acquire a letter granting the permission the researcher to undertake the research.

### **3.7 Data Analysis**

Data analysis can be defined as the process through which structure, order, and meaning are obtained to the mass information collected. Therefore, editing, coding, classifying as well as tabulating are the vital steps of processing to be used to process the collected data for an efficient and better analysis. First, the data will be cleaned, sorted and then collated. Then, the data will be fed into computer, and finally the analysis will be done. Descriptive statistics including mean will be used describe the data. Other test diagnostics tests that will be carried out on the data include normality test. Pearson Product-Moment Correlation Analysis, event trend analysis and Regression analysis and will be used to show and measure the relationship between interest rates capping and commercial bank credit supply.

First, Pearson correlation test will be done to investigate the statistical significance effects of the interest rates on the total commercial bank credit supply before and after the interest capping. The correlation value before and after interest rate capping will be observed. A negative Pearson correlation value will mean that the lending interest rates negatively affect total commercial bank credit supply while a positive value will mean that the lending interest rates positive effect on the total commercial bank credit supply.

Lastly regression method will be used to assess the effects of interest rate capping on commercial banks credit supply. Interest rate capping will be treated as a dummy variable which will take the value of 1 for 12 months after the capping and 0 for 12 months before the capping. The coefficient of the dummy variable capturing interest rate capping will be assessed for statistical significance in order to check effects of the interest rates on the

total commercial bank credit supply before and after the interest capping. Here, the study will use a regression model specified as follows;

$$CC = \alpha + \beta_1 Sr + \beta_2 Lr + \beta_3 Dy + e$$

**Where:**

$CC$  = Total credit bank supply measured by ratio of total commercial banks credit supply to private sector to total commercial banks asset

$Sr$  = saving deposits interest rates measured as ratio or percentage

$Lr$  = Loans and advances interest rates measured as ratio or percentage

$Dy$  = Dummy variable (taking value 1 after interest rate capping and 0 before interest capping).

$e$  = the error term which other factors

The regression model will be used to predict the values of  $\alpha$  and  $\beta_i$  (where  $i = 1, 2$  and  $3$ ), which explains the relationship between the dependent and independent variables. This method is preferred due to its predictive power of multivariate association  $\beta$ , estimated coefficient of correlation  $R$ . The coefficient of determination  $R^2$  will be utilized to explain the association amid the dependent with the independent variable; the T-test will assess the significance of individual betas and standard b-coefficients will be compared (beta weights) to explain the relative predictive power of independent variables and the overall model. The analysis will be done using the Statistical Package for Social Scientists (SPSS).

## **CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION**

### **4.1 Introduction**

This chapter discusses and describes the analysis of data on the various research findings. It also establishes the relationship exhibited between interest rate capping and supply of credit by Kenyan commercial banks through analysis. The data is represented in the form of tables. The project research is based on two years monthly data from July 2015 to June 2017. The data was analyzed using SPSS version 23.

### **4.2 Response Rate**

The data collected was based on secondary data hence there was no questionnaire required for response rate. The data in this research were found on the secondary published sources from the Central Bank of Kenya.

### **4.3 Data Validity**

The data is valid since it's from the CBK website. CBK usually publishes data on their website for the public domain. This is also to clarify that the data relied on carries with it any omission of errors from the source and as such it is believed that the data is correct as published.

### **4.4 Descriptive Statistics**

Descriptive Statistics of the data considered in this study is shown in the table 1 below. The table 1 shows distribution in terms of various statistical measures of the credit supplied by commercial banks and the predictor variables, which include lending rates (LR), deposit rate (SR) and the dummy variable (DY).

**Table 1: Descriptive statistics**

| Variable              | N  | Minimum | Maximum | Mean    | Std. Deviation |
|-----------------------|----|---------|---------|---------|----------------|
| CC                    | 24 | 56.99   | 63.67   | 59.8830 | 1.5096         |
| Lending Rate (LR) %   | 24 | 13.61   | 18.30   | 15.9063 | 1.9919         |
| Deposit Rate (SR) %   | 24 | 6.31    | 8.02    | 7.1492  | 0.4492         |
| Dummy Variable (DY) % | 24 | 0       | 1       | 0.38    | 0.495          |

*Source: Author computations using SPSS*

The total number of observations (N) considered in this study was 24 with four variables – one dependent and three predictor variables. The minimum and the maximum values can be used to find the range of each of the variables used. For instance, from table 1 above the credit supply by commercial banks (CC) has a minimum of 56.99 while the maximum value is 63.67. In this case, the range can be found by subtraction of the minimum value from the maximum value to get a range of 6.68 (63.67-56.99). This was also done for the other variables.

The mean refers to the average of the summation of each of the variables. That is, the total sum of a variable divided by the number of observations. For instance, the mean of the lending rate is 15.9063 which is the summation of lending rates in the data series divided by 24 observations. On the other hand, the standard deviation measures the dispersion of the values from the mean. This measure is critical for comparative purposes. The analysis of the data series indicates that dependent variable depicts a larger spread from the mean of 15.9063; followed by lending rates (LR) at 1.9919; dummy

variable at 0.495 whereas the deposit rate has the lowest size of standard deviation deposit rates at 0.4492 of dispersion.

#### 4.5 Correlation Analysis

Correlation analysis is used to determine the extent of the correlation of different pairs of variables under study. The correlation coefficient normally ranges between 1 and -1. This further predicts presence or absence of multicollinearity which is considered to exist when there is perfect linear relationship between the variables under the study.

**Table 2: Pearson Correlation Analysis**

| Variable              | CC    | Lending Rate (LR) % | Deposit Rates (SR) % | Dummy Variable (DY) % |
|-----------------------|-------|---------------------|----------------------|-----------------------|
| CC                    | 1.000 |                     |                      |                       |
| Lending Rate (LR) %   | 0.087 | 1.000               |                      |                       |
| Deposit Rates (SR) %  | 0.349 | -0.142              | 1.000                |                       |
| Dummy Variable (DY) % | 0.170 | -0.835              | 0.336                | 1.000                 |

*Source: Author computations using SPSS*

The Pearson correlation test was done to investigate the statistical significance for effects of the interest rates capping on the total commercial bank credit supply. The correlation value between various variables indicate that there is no multicollinearity between the independent variables as there is no value that exceeds 0.90 in either direction. A Pearson correlation test values indicate that the lending interest rates and the total commercial bank credit supply are positively correlated at 0.87 in table 2. This means that a unit increases in lending rates may result to 87% increase in total credit supply by commercial

banks. Table 2 also shows that there is also a positive correlation between deposit rates and credit supply commercial banks at 34.9%. This means that a unit increase in deposit rates may result to 34.9% increase in total credit supply by commercial banks

#### 4.6 Regression Analysis and Hypotheses Testing

The study used regression equation to estimate the value of beta. The method was used to assess the effects of interest rate capping on commercial banks credit supply. The t-test was used to determine the significance of the coefficients of independent variables as shown in the table 3 below:

**Table 3: Regression Analysis Output**

| Variable              | Unstandardized Coefficients |            | Standardized Coefficients | t     | p>t   |
|-----------------------|-----------------------------|------------|---------------------------|-------|-------|
|                       | B                           | Std. Error | Beta                      |       |       |
| Constant              | 43.435                      | 5.391      |                           | 8.057 | 0.132 |
| Lending Rate (LR) %   | 0.494                       | 0.249      | 0.651                     | 1.983 | 0.006 |
| Deposit Rates (SR) %  | 1.217                       | 0.581      | 0.357                     | 2.065 | 0.042 |
| Dummy Variable (DY) % | 0.24                        | 1.033      | 0.008                     | 0.023 | 0.982 |

*Source: Author computations using SPSS*

The following hypothesis was tested:

$H_0: \beta_i=0$  That is,  $\beta_i$  is not significant in determining the level and extent of supply of credit by commercial banks in Kenya. If  $(p>t) > 0.05$ , we reject the null hypothesis while if  $(p>t) < 0.05$  we fail to reject the null hypothesis.

$H_1: \beta_i \neq 0$  That is,  $\beta_i$  is a significant determinant of the level and extent of supply of credit by commercial banks in Kenya.

The analysis of variance and the coefficient of determination results are respectively shown by the table 4 and 5 below:

**Table 4: Analysis of Variance within the Regression Model**

| ANOVA      | Sum of Squares | df | Mean Square | F     | p>t   |
|------------|----------------|----|-------------|-------|-------|
| Regression | 24.547         | 3  | 8.182       | 5.873 | 0.005 |
| Residual   | 27.866         | 20 | 1.293       |       |       |
| Total      | 52.413         | 23 |             |       |       |

*Source: Author computations using SPSS*

**Table 5: Coefficient of Determination**

| R   | R Square | Adjusted R Square |
|---|----------|-------------------|
| 0.204 <sup>a</sup>  | 0.659    | 0.793             |
| a. Predictors: (Constant), Dummy Variable (DY) %, Deposit Rates (SR) %, Lending Rate (LR) % |          |                   |

*Source: Author computations using SPSS*

The coefficient of determination shown in table 5 above measures the goodness of fit of the model. The detailed explanation is in the section 4.7 below.

#### **4.7 Discussion of Research Findings**

This study explored the relationship between interest rate capping and the supply of credit by the commercial banks in Kenya as suggested by the literature reviewed. From the results displayed in table 3 above, two out of three predictor variables are positive and exclusively statistically significant in influencing supply of commercial banks credit in Kenya while one predictor variable is statistically insignificant. Generally, all the



variables used in the study have an overall significance level of 0.005 as shown in table 4 above. This means that, in a general sense, the variables used were significant in influencing the level of supply of credit by commercial banks.

This study found that lending rates and deposit rates are important and significant determinants of the level of credit that is supplied by commercial banks in the market. First, holding all other factors constant, a unit increase in the lending rate (LR), leads to an increase of credit supply by 49.4% in table 3 above. Secondly, a unit increase in the deposit rate can lead to 121.7% increase in credit supply in table 3 above. The estimation results show that interest capping can lead to over-borrowing of loans by private sector and other borrowers and hence the positive relationship with the supply of credit. The findings are synonymous with the economic theory which states that when interest rates are lowered then investment level in an economy increases through increased borrowing to finance these investments. On the other hand, interest rate capping which was represented by a dummy variable in this study was found to be statistically insignificant in determining the level of supply of credit. However, Munir and Hussain (2010) in Pakistan findings contradicted this. They used Error Correction Method and Co-integration test to investigate the annual time series data for the period 1973-2007 and found out that monetary liberalization has a negative effect on private investment and private credit due to rates of interest being negative for some years due to a high rate of inflation. The findings in this study indicate a negative correlation between monetary liberalisation and investment. In other words, with interest rate capping more private sector investment is stimulated leading to better growth and thus higher economic growth and development.

The coefficients of the regression in table 3 indicate that, holding all other factors constant, there would be positive borrowing of funds from commercial banks. Similarly, if price of loans are introduced by the suppliers (commercial banks) in form of lending rates, then this positively and significantly increases the amount of money supplied by the commercial banks. Similarly, the deposit rate is an incentive to investors to deposit more money in the commercial banks and earn incomes in form of deposit interest. This means that more money is available at the commercial banks for borrowing thus significantly increasing the amount of credit supplied in the market. In related and similar findings, Chowdhury (2001) while studying supply of private loans in Bangladesh shows that real interest rates and financial private borrowings show a negative relationship during post and pre reform period.

We can see from the results in table 3 above, an introduction of interest rate capping has no significant effect in the amount of money supplied by commercial banks in Kenya. This can partly be explained by the fact that the capping was introduced one year ago. The data may have been limited to observe the likely effects of the capping in the medium to long run. This argument is valid in economic theory in that for time series data, there needs to be sufficient amount of data available to be able to make inferences and observe likely impact from such a variable. In addition, capping of interest rate puts a ceiling on how high the lending rates and the extent to which deposit rates should not decline. This is a disincentive from the supply side of credit. For this reason, interest rate capping is an insignificant factor to determine the amount of credit a bank can offer as it only contributes to suppressing its margins. We can compare this with Zaman et al. (2013) who did a study on interest rates and banking sector in Pakistan. He concluded

that an increase in the interest rates leads to higher profitability due to an increase in the spread on the supply side but lower interest rates would lead to a decrease in the profitability due to a reduced spread of the lending rate.

The coefficient of determination (table 5) in this study was used to establish the extent to which the independent variables explain the variation in the credit supply by commercial banks. In our case, this is measured by the adjusted  $R^2$  which is 0.793 in table 5. This means that the independent variables (i.e. lending rate, deposit rate and interest capping) explain 79.3% of the total variations in the dependent variable (ratio between the total credit supply and total size of bank assets in billion shillings). The model is therefore a good fit. The difference of 20.7% represents variations explained by other factors not included in the model.

Even though majority of the literature reviewed conclude that interest rate capping is beneficial to the economy through positively impacting the supply of credit, Black et al. (1997) studied the effect imposition of interest rate capping when the government puts ceilings on interest rate and concluded that the markets' demand and supply do not interrelate freely. They argued that when the government puts a ceiling on interest rates, the movement of resources is not changed if the equilibrium price is overhead leading to limited access of credit to poor people due to their incomplete qualifications which are required by the banks. The results of this study are synonymous with our finding that interest rate capping is a statistically insignificant as a determinant of credit supply.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter deals with the summary of the study findings and policy recommendations and a snapshot of limitations of the study and suggestions on areas of further research.

### **5.2 Summary of Findings**

Kenya's economy has been characterised by a stable macroeconomic landscape including a vibrant financial sector. The financial sector has been at centre stage in fuelling economic growth through facilitation of financial intermediation in the economy. The importance of this sector and its players (especially the banking sub-sector) can therefore not be undermined.

The government of Kenya enacted the Banking Act and the Prudential and Regulations Guidelines to aid in regulating the banks, other financial institutions and Mortgage Finance Institutions. The regulations are implemented and enforced by the Central Bank – which in addition to regulation, supervises and licenses banks and other financial institutions defined by the Banking Act. Currently, there are forty-three (43) licensed commercial banks which include one mortgage finance company.

Kenya aims at achieving the Vision 2030 aspirations through encouraging entrepreneurial culture, innovations and mature start-up companies/informal sector. The latter's success are all premised on a strong, vibrant and prudent financial sector to offer affordable credit or loans to these companies and/or the informal sector. In this regard, policy steps that incentivise both sides – demand and supply is an asset.

To achieve the intended objective, the study adopted time series data to estimate the regression establishing the relationship between interest rate capping and the credit supply by commercial banks. The t-test was used to determine the statistical significance of the predictor variables' coefficients. The results indicated that lending rate (LR) and deposit rate (SR) are independently and statistically significant in determining the level and extent of supply of commercial banks credit. The study found that a unit increase in lending rate and deposit rate can potentially increase the amount of credit supplied by commercial banks by 49.4% and 121.7% in chapter 4 table 3 respectively.

In determining whether regression model was a good fit or not, the study estimated an adjusted R squared. The adjusted R squared yielded 79.3% implying that the total variations in the supply of credit was explained 79.3% by the independent variables included in the model while the other variation (20.7%) could be explained by other factors not included in the model. The exogenous variables include other factors such as government policy, social factors such as nature of employment among others which were not part of this study.

### **5.3 Conclusion**

The financial sector in Kenya is very critical in the performance of the economy. The banking sector supports the growth of the economy through lending across all key sectors of the economy like manufacturing, informal sector and infrastructural development. The banking sector also helps in resource mobilization. This is done through partnerships with international lenders through lines of credit to support enterprises and financing through the public private partnerships.

In practical sense, there has been a decrease in the lending to households and businesses but an increase in lending to the government. There also has been a decrease in the profitability margins in the banking sector. Credit is needed to enhance growth it is therefore imperative to adopt forward looking policies and regulatory measures that create an enabling environment for both demand and supply side players.

The government has a noble duty through the central bank, the legislature, the banking system and the general public to work in unison towards the betterment of this sector if the country is to achieve the Vision 2030 ambitions. This is realisable through continuous frantic effort to stimulate growth through a stable financial sector – which serves as an engine of growth in many developing economies.

This study used a regression model, where the dependent variable was regressed over three key predictor variables namely; lending rate, deposit rate and interest capping – proxy by a dummy variable at 5% level of significance. The study results show that all the independent variable have a positive effect on the supply of credit though at varying magnitude. On the higher side, the study found that interest capping is a factor influencing supply of credit such that a unit increase in tightening of interest rate cap can lead to over 24 times jump in the supply of credit. Similarly, a unit increase in the deposit rate and lending rate can yield into proliferation of credit supply by over 121 times and 49 times respectively.

In conclusion, it is evident that the effects of the lending and deposit interest rates capping are important in the determination of size of credit supply in an economy. As such, the right mix of rates needs to be installed to ensure both consumers and credit

suppliers don't suffer adversely. There is therefore need for forward-looking policies to enhance consumer protection in the market.

#### **5.4 Recommendations**

The economic competitiveness of domestic goods and services in Kenya is important. The stimulus for all these includes availability of capital and working capital to sustain the businesses in the country. As this happens, capping of interest rates at which loans should be supplied and deposit rates should be set and reviewed regularly to ensure a win-win situation for both demand and supply-side players in the banking system.

There is need for the Government of Kenya to create an enabling environment for banking business to survive in Kenya. As such lessons learnt from other countries should guide the interests of legislature and policy makers in determining what best course of action for Kenya is. For instance, in further review of the interest cap laws, the policy makers should consider the common good of both suppliers of credit (commercial banks) and consumers of credit (households and businesses). In addition, the Central bank independence should be guaranteed to ensure the right regulation, control and supervision of the financial sector is done in a professional manner.

Finally, there is need for the central bank and the Kenya Bankers Association to work with the legislature in ensuring the great potential for the banks in contributing to economic growth and development is harnessed to even attract foreign investors in this sector and hence boost employment and leverage on global knowledge sharing.

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

This study concentrated on a short time period before and after the interest rate capping law came into force. The future studies should look forward towards including more time periods as data is continually published by the Central Bank of Kenya. The emphasis of this study is on secondary data and there is need to also work with primary data to get qualitative views of banking sector veterans as well as borrowers who will bring first-hand experience into the study.

Secondly, this study concentrated with the commercial banks since they were directly affected by the interest rate caps introduced recently in Kenya. However, it would be important to empirically analyze the impact of interest rate capping on other lender such as Savings, Credit and Cooperative Societies (Saccos), international banks with representation in Kenya, microfinance banks and social groups through table banking. By understanding the impact on other financial sector players, it would help in having a more sector-wide comprehension.

Finally, the study utilized only three independent variables which were crucial in deriving the answers to the study objectives. In future studies emanating from related subjects, the range of variables can be expanded to assist in understanding impact of other variables such as turnovers, size of board among others which gives more robust view and understanding.

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

This study mainly undertook to investigate impact of interest rate capping on supply of credit in the economy – a case study of Kenya. The study can be extended to analyze



impacts in other countries with comparable economic characteristics. By doing this, this study would get more value from the benchmarks.

This study recommends further studies to establish the causes of significant variation in the dummy variable which represents the interest rate capping.

Finally, the involvement of entire financial sector stakeholders including the policy makers, other credit suppliers and the general public will add the qualitative dimension in the study. A mix of qualitative and quantitative aspects of the factors that influence supply of credit in financial sectors globally would provide indispensable insights to this study.

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## APPENDICES

### Annex I: List of Commercial Banks in Kenya

| No. | Name                                  |
|-----|---------------------------------------|
| 1   | KCB Bank Kenya Limited                |
| 2   | Equity Bank (Kenya) Limited           |
| 3   | Co - operative Bank of Kenya Limited  |
| 4   | Standard Chartered Bank Kenya Limited |
| 5   | Barclays Bank of Kenya Limited        |
| 6   | Diamond Trust Bank Kenya Limited      |
| 7   | I&M Bank Limited                      |
| 8   | Commercial Bank of Africa Limited     |
| 9   | Stanbic Bank Kenya Limited            |
| 10  | Citibank N.A. Kenya                   |
| 11  | NIC Bank Limited                      |
| 12  | Bank of Baroda (K) Limited            |
| 13  | Prime Bank Limited                    |
| 14  | Bank of India Limited                 |
| 15  | HFC Limited                           |
| 16  | Victoria Commercial Bank Limited      |
| 17  | Gulf African Bank Limited             |
| 18  | Guaranty Trust Bank (K) Limited       |
| 19  | Family Bank Limited                   |
| 20  | Habib Bank A.G. Zurich                |
| 21  | Giro Commercial Bank Limited          |
| 22  | Habib Bank Limited                    |
| 23  | Guardian Bank Limited                 |
| 24  | African Banking Corporation Limited   |
| 25  | National Bank of Kenya Limited        |

|    |                                    |
|----|------------------------------------|
| 26 | Trans National Bank Limited        |
| 27 | Credit Bank Limited                |
| 28 | Paramount Bank Limited             |
| 29 | Development Bank of Kenya Limited  |
| 30 | Sidian Bank Limited                |
| 31 | UBA Kenya Limited                  |
| 32 | Paramount Bank Limited             |
| 33 | M-Oriental Bank Limited            |
| 34 | First Community Bank Limited       |
| 35 | Middle East Bank (K) Limited       |
| 36 | Consolidated Bank of Kenya Limited |
| 37 | Jamii Bora Bank Limited            |
| 38 | Spire Bank Limited                 |
| 39 | Ecobank Kenya Limited              |
| 40 | Chase Bank Kenya Limited           |
| 41 | Imperial Bank Kenya Limited        |
| 42 | Charterhouse Bank Limited          |
| 43 | Fidelity Commercial Bank Limited   |

Source: Central Bank Kenya, Bank Supervision Annual Report, 2016. [www.centralbank.com](http://www.centralbank.com), retrieved on 13 June 2016

## Annex II: Secondary Data Collection Guide

| Observations | Study Period   | Dependent Variable  | Independent Variables                    |                                       |   |
|--------------|----------------|---|--|---------------------------------------|---|
|              |                | Total commercial banks credit supply to private sector (in Kshs) (CC) | Loans and advances interest rates % (Lr) | saving deposits interest rates % (Sr) | Dummy variable (taking value 1 after interest rate capping and 0 before interest capping.(Dy) |
| 1            | July 2015      | 58.5865   | 15.75                                    | 6.31                                  | 0   |
| 2            | August 2015    | 58.8052   | 15.68                                    | 6.91                                  | 0   |
| 3            | September 2015 | 59.7619   | 16.82                                    | 7.28                                  | 0   |
| 4            | October 2015   | 60.8894   | 16.58                                    | 7.54                                  | 0   |
| 5            | November 2015  | 60.7792   | 17.16                                    | 7.39                                  | 0   |
| 6            | December 2015  | 63.6660   | 18.30                                    | 8.02                                  | 0   |
| 7            | January 2016   | 59.9139   | 18.00                                    | 7.57                                  | 0   |
| 8            | February 2016  | 59.1200   | 17.91                                    | 7.49                                  | 0   |
| 9            | March 2016     | 62.4590   | 17.87                                    | 7.17                                  | 0   |

|    |                |         |       |      |   |
|----|----------------|---------|-------|------|---|
| 10 | April 2016     | 59.6450 | 18.04 | 6.89 | 0 |
| 11 | May 2016       | 61.7118 | 18.22 | 6.44 | 0 |
| 12 | June 2016      | 60.3365 | 18.18 | 6.78 | 0 |
| 13 | July 2016      | 60.8405 | 18.10 | 6.64 | 0 |
| 14 | August 2016    | 60.1702 | 17.71 | 6.42 | 0 |
| 15 | September 2016 | 59.2741 | 13.84 | 6.91 | 0 |
| 16 | October 2016   | 59.5533 | 13.65 | 7.82 | 1 |
| 17 | November 2016  | 59.4732 | 14.31 | 7.65 | 1 |
| 18 | December 2016  | 60.4837 | 13.69 | 7.33 | 1 |
| 19 | January 2017   | 60.6097 | 13.66 | 7.20 | 1 |
| 20 | February 2017  | 59.8939 | 13.69 | 7.65 | 1 |
| 21 | March 2017     | 58.9301 | 13.61 | 7.12 | 1 |
| 22 | April 2017     | 57.4730 | 13.61 | 6.97 | 1 |
| 23 | May 2017       | 57.6717 | 13.71 | 7.07 | 1 |
| 24 | June 2017      | 56.9912 | 13.66 | 7.01 | 1 |