RESEARCH ARTICLE

THE EFFECT OF INTEREST RATE VOLATILITY ON INTEREST INCOME OF COMMERCIAL BANKS IN RWANDA

*Emmanuel NIYONSABA and Dr. Jaya SHUKLA

Jomo Kenyatta University of Agriculture and Technology, Kenya

ABSTRACT

Interest rates are typically determined by the supply and demand for money in the economy. If at any given interest rate, the demand for funds is higher than supply of funds, interest rates tend to rise and vice versa. In Rwanda Interest rates change in response to a variety of economic events including changes in government policy, crises in domestic and international financial markets and changes in the prospects for long-term economic growth and customer attributes. The interest rates in Rwanda remain high, despite central bank's efforts to reduce the key repo rate. In spite of volatility of interest rates in commercial banks the interest income keeps increasing. Therefore, researcher intends to assess the effect that the volatility of interest rates has on interest income of commercial banks. To analyze the effect of banks internal factors on interest income from loans in commercial banks in Rwanda, to analyze the effect of external factors on profit from government securities in commercial banks in Rwanda and to examine the relationship between interest rate volatility and interest income of commercial banks in Rwanda. This study was adopted both comparative research design and descriptive research design. Researcher attempt to identify and analyze similarities and differences between I&M bank and Bank of Kigali. For the purpose of this study, a sample size of 229 respondents was determined from total population of 540 employees from BK and I&M banks. Researcher used purposive sampling; the researcher chooses the sample based on who they think would be appropriate for the study. Fist objective Spearman's correlation coefficient, (r=0.914) shows that there is Positive high correlation between internal factors and commercial banks income. Second objective (r=0.741) shows that there is Positive high correlation between external factors and profit from government securities and third objective show that Spearman's correlation coefficient, (r=0.724) shows that there is Positive high correlation between Interest rate volatility and Interest income of banks. ANOVA test show that F-statistics (F=214.145) is far greater than the P-value (0.000) hence a further confirmation that aspects of internal factors and external factors are significantly influential the interest income of two selected commercial banks in Rwanda. The government of Rwanda regulates the banking practice to ensure the consumers are protected from the practices of the banking institutions to promote growth and stability. It is due to the significance of the banks in their financial intermediation that the governments ensure to keep close watch of the financial institutions. Based on the findings in chapter four and conclusions above, the study recommends that commercial banks evaluate their lending rates properly to ensure that they have adequate loan disbursement but also high returns that would improve the interest income of commercial banks.

INTRODUCTION

Financial institutions play the role of linking net savers and net borrowers in the financial markets (Chirwa and Mlachila, 2004). These institutions receive deposits from the savers and use the same to lend to the borrowers, hence creating the role of financial maturity intermediation. The role of the financial institutions is to use the savers short-term deposits and create credit to loan to long-term borrowers in what is referred to as the maturity intermediation. Financial institutions must therefore keep their balance sheet fairly balanced in order to be able to meet the depositors demand for their funds while still lending to borrowers. Interest rate can be defined as the cost of borrowing money or the price that a borrower of funds should

Corresponding author: **Emmanuel NIYONSABA,**
Jomo Kenyatta University of Agriculture and Technology, Kenya.

be willing to pay for obtaining money from a lender or a financial institution. It can also be described as the fee paid to a lender on borrowed financial assets (Barnea and Kim, 2007). The lender receives a compensation for foregoing other uses of their funds, including deferring their own consumption. The original amount lent is called the principal and the percentage of the principal which is paid or payable over a period of time is the interest rate or the coupon (Thygersa and al.,, 1995). According to (Saunders and Carlos, 1999), interest rate like other prices is a price paid for a commodity (funds) by the borrower to the lender. This special type of transaction is a loan, credit transaction or deposit, involving a supplier of surplus funds, that is, a lender or saver, and a demander of surplus funds, that is, a borrower (Bikbov and Chernov, 2004). Interest rates help have a double barreled function in that they cover the costs of loans and act as an impetus that induce savers to make deposits so that they can earn a return. There

are various reasons that justify the need for investors (savors) to charge interest rates. Interest rate targets are a vital tool of monetary policy and are taken into account when dealing with variables like treasure loans, Treasury bill, interbank market and other fees from banks. The central banks of countries generally tend to reduce interest rates through monetary policy when they wish to increase the investment and consumption in the country's economy. However, a low interest rate as a macro-economic policy can be risky and may lead to the creation of an economic bubble, in which large amounts of investments are poured into the commercial banks and stock market. This happened in Japan in the late 1980s and early 1990s, resulting in the large unpaid debts to the Japanese banks and the bankruptcy of these banks and causing stagflation in the Japanese economy with exports becoming the last pillar for the growth of the Japanese economy throughout the rest of 1990s and early 2000s. The same scenario resulted from the United States' lowering of interest rate since late 1990s to the year 2008, (2007–2012 global financial crises) substantially by the decision of the Federal Reserve System (Patra and Barabara, 2010).

When money is loaned, the lender delays spending the money on consumption of goods. The time preference theory posits that people prefer to enjoy the utility of a good as opposed to later and also assumes a free market that has a positive interest rate. Hence, interest rates are charged as a trade-off for deferred consumption. Due to inflationary expectations, a given amount of money buys fewer goods in the future than it does now, therefore, the borrower needs to compensate the lender for the risk of losing the purchasing power in the future (Flannery and Bollerslev, 1981). While the lender has a choice between using the money in different investments, they choose lending and forego the returns from all the others. Hence, interest rate can be viewed as the opportunity cost or the cost of alternative investment (Weth and Ataullah, 2002). Interest rate compensates for the risk that the borrower may go bankrupt or abscond, or otherwise default on the loan implying that the lender will incur financial losses. Availability of information on interest rates is important not only for practitioners, but also for monetary authorities. The estimation of the volatility of interest rates is equally important as it allows gauging uncertainty surrounding market's expectations, notably as regards the future path of the monetary policy rate. Measuring and analyzing volatility of interest rates is an important element of any financial market analysis. Interest rates volatility has a number of implications to business organizations that depend on other financial institution to raise money for projects. A variation in interest rates is the major reason why financiers turn resources to less riskier investments such as government securities. When financiers opt to divert resources to government securities, the money available to other sectors especially the private sector is limited. This makes it difficult for private sector companies to access credit facilities for their projects.

Interest rates charged on money in the financial markets is also indicative of many market aspects. First, interest rate as a price of money reflects the market information regarding expected change in the purchasing power of money or future inflation (Brock and Franken, 2003). It also reflects the risks of rising and falling economic activity, and credit rating changes. Interest rates can also indicate the expected changes in the maturity preferences of bondholders and the changing preference for other classes of investments, notably stocks or commodities (Bondt and Barnea, 2002). Often, investors are willing to receive a higher return for funds invested over a longer period to compensate for risk of default by the borrower and the uncertainties in the economic climate. In Rwanda Interest rates change in response to a variety of economic events including changes in government policy, crises in domestic and international financial markets and changes in the prospects for long-term economic growth and customer attributes. Economic events such as change in government policies and crises in the financial markets are irregular and unprecedented. Hence, the effect of such events on the interest rates is only reactive rather than predictive. However, more regular events such as the business cycles, expansion and contraction experienced by the economy over time determine the volatility of the interest rates (Chernov and Bikbov, 2004). To make banking system stable requires stable macroeconomic environment which adds to efficient and effective growth of savings and investment decision. The interest income of banking system particularly in the areas of monetary policy, transparent fiscal policy and financial stabilization should be supported by macroeconomic measures. National Bank of Rwanda plays an important role in the efficient and effective growth of economy by providing guidelines to the financial institutions thus facilitating the investors and mobilizing the resources of the economy for development in the country (BNR, 2014). The capability to predict and to avoid the risk to fulfill the losses due to the arisen risk is essential for the success of banks. The cheapest source of funding for competitive banking institution is profit and it is the major requirement of a banking institution. The rising competition in financial institutions makes it necessary for the success of banking industry.

II. Statement of the Problem

The interest rates in Rwanda remain high, despite central bank's efforts to reduce the key repo rate. In spite of volatility of interest rates in commercial banks the interest income keeps increasing. Therefore, researcher intends to assess the effect that the volatility of interest rates has on interest income of commercial banks. A repressed financial system, characterized by set credit controls and distorted price indicators, is viewed as a hindrance to economic growth as it promotes inefficiency in the allocation of resources. It also curtails domestic resource mobilization when the interest rates are set at low levels. Thus, it makes the economy dependent on foreign savings and supports fiscal indiscipline as the government obtains almost zero-interest-denominated resources to finance its deficit. Studies conducted on interest rate volatility indicate that it has adverse effects on different aspects of business. For instance a study carried out by (Thakor and Greenbaum, 1981) on Bank loan commitments and interest rate volatility confirms that volatility of interest rates play a very significant role in determining whether customers will remain committed to repaying their loans.

III. Hypothesis of the Study

Hypothesis is a formal statement that presents the expected relationship between an independent and dependent variable. It is a conjectural statement of the relation between two or more variables. The following hypotheses were tested in this study:

H0=0 There is no significant relationship between interest rate volatility and interest income from two selected commercial banks in Rwanda.

H$_{1\#0}$: There is significant relationship between interest rate volatility and interest income two selected commercial banks in Rwanda.

IV. Research Methodology

This study was adopted comparative research design. The comparative research essentially compares two commercial banks in an attempt to draw a conclusion about them. Researcher attempt to identify and analyze similarities and differences between I&M bank and Bank of Kigali. Comparative studies were used to increase understanding between the effects of interest rate volatility on interest income on commercial banks in Rwanda. These studies contain both quantitative and qualitative research methods.

V. Model development

Interest income or Y= dependents variable x_1 −x_3 are independent variables (f) represents the functional notation. This can be specifically stated as:

$$Y= f(BP_1, MP_2, CA_3) \qquad \ldots\ldots\ldots\ldots (2)$$

Where; Y = Interest income IBM_1= Interbank market, IR_2 = Interest on Loans, IS_3 = Interest on Securities. The explicit form of equation (i) is represented as: $Y=\beta_0 + \beta_1 IBM_1 + \beta_2$

$$IR_2+ \beta_3 IS_3+\varepsilon \qquad \ldots\ldots\ldots\ldots (3)$$

$$Y=\beta_0 + \sum_{i=0}^{n}\beta_1(IBM1)t + \sum_{i=0}^{n}\beta_2 (IR2)t + \sum_{i=0}^{n}\beta_3 (IS3) + \sum_{i=0}^{n}\sum t \qquad \ldots\ldots\ldots\ldots\ldots (4)$$

VI. Data Analysis

Table 1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.953[a]	.909	.905	.160

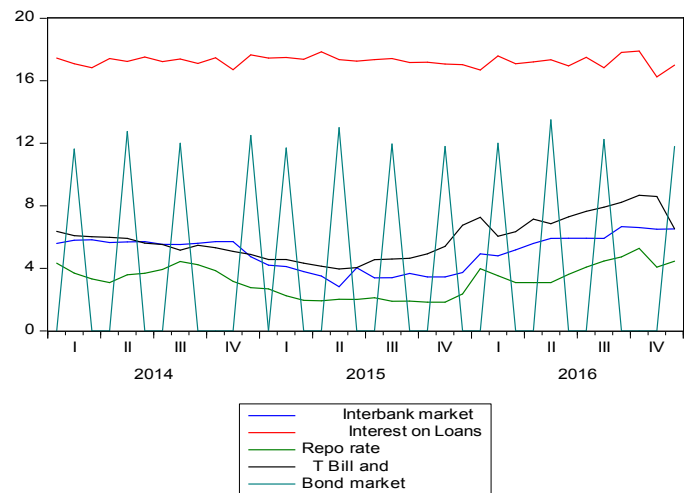a. Predictors: (Constant), Internal factors and external factors

According to results in Table 1 above, the factors of interest rate volatility is divided in two parties, external factors and internal factors, where (R^2=0.909) with variations in aspects of external factors and internal factors contribute 90.9% to interest income of two commercial banks (I&M bank and BK). External factors and internal factors have a positive significant to the interest income of selected commercial bank. An ANOVA result further shows that internal factors and external factors explain the variations of commercial banks interest income. The table above 2 shows the sig value (0.000) less than the level significance (0.05). The F-statistics (F=214.145) is far greater than the P-value (0.000) hence a further confirmation that aspects of internal factors and external factors are significantly influential the interest income of two selected commercial banks in Rwanda. The residual value (2.202) is less than the regression value (21.930) which means that external and internal factors contribute to the banks interest income. Using linear regression analysis from SPSS data bases, shows that interest rate volatility and interest income is significant with (sig=0.000 and 0.01). This means that all internal and external factors influence the interest income of

selected commercial banks in Rwanda. Where internal factor is (beta=0.505,t=5.264) and external factors (beta=0.329,t=3.361) Y=0.671+0.448x1+ 0.283x2+ε

Table 2. ANOVA Test

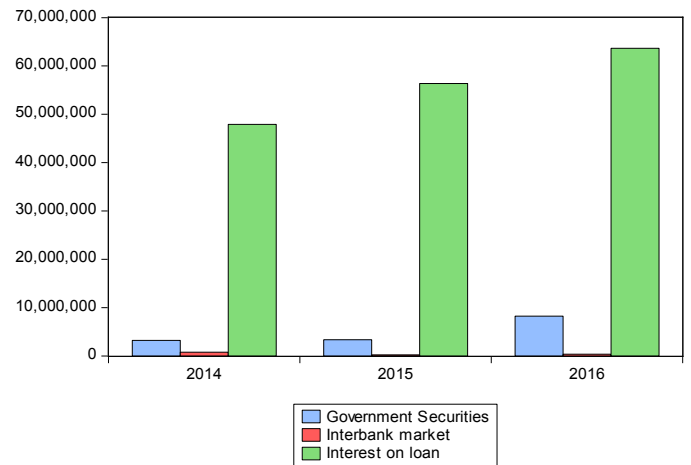| Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	21.930	4	5.483	214.145	.000[a]
	Residual	2.202	86	.026		
	Total	24.132	90			

a. Predictors: (Constant), Internal factors and external factors
b. Dependent Variable: Interest income

Source: Plotted by Researcher using E-views, 2017

Figure 1. The analysis of BK interest rate volatility on interest income

Figure 2. Interest rates volatility in BK

Source: *Plotted by Researcher using E-views, 2017*

Figure 2. Interest income of BK from 2014 to 2016

Figure 2&3 shows that average lending interest rates of BK were volatile between 17% and 18%, while interest rates of T-Bonds fluctuated between 11.625% and 13.5%; T-Bills interest rates fluctuated between 3.96% and 7.645%, Repo rates fluctuated between 1.831% and 4.441% and interbank market rates varied between 2.82% and 5.928%. The researcher was not able to find monthly data on interest income from BK as it was the case for the interest rates to allow us compares the volatility with interest income. However we notice that lending

Table 3. Regression Analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.671	.145		4.618	.000
	Internal factors	.448	.085	.505	5.264	.000
	External factors	.283	.084	.329	3.361	.001
a. Dependent Variable: Interest income						

interest rate did not fluctuate as much as interest rates on government securities. In fact the average lending interest rates are generally fixed and they fluctuate depending on type of loans, type of collateral and the level of risk the bank is exposed to. The interest rates of government securities are the ones that were volatile especially the short term rates i.e. Repo rates and T-Bills rates during the period under review, and this was due to the fact that they are regulated by the central bank. We note that for the same period interest income of BK continued to increase except for the interest income from interbank market which were volatile during 2014 to 2016.

BK lending rate volatility vs. interest income from loans

Figure 2 shows the interest volatility of BK, basically banks make money by lending money at rates higher than the cost of the money they pay on deposits or savings. More specifically, banks collect interest on loans and interest payments from the debt securities they own, and pay interest on deposits, and short-term borrowings. The difference is known as the "spread," or the net interest income, and when that net interest income is divided by the bank's earning assets; it is known as the net interest margin. Interest rate volatility of loans has a big impact on interest income of bank and this confirmed by the responses from the staff of BK they said that the main source of bank income is interest income from bank loan. The average lending interest rate of BK is ranging between (17%-18%) from 2014-2016, this means that the interest rate of BK has volatility. The income of BK has been increasing from 2014-2016. This is confirmed by the views of respondents said that the main source of bank income is the income from loan. The high interest rate is positive for the banks income but you have to ask yourself what the context is," (Claudio Borio, 2015), chief economist at the Bank for International Settlements, said that if rates rise because the economy is strong, that is good for banks. But if rates rise too quickly and trigger loan defaults, that presents a problem. "Another question you may ask is whether banks have cleaned up their portfolios, if interest rates rise then that could have a big impact on the credit worthiness of their customers."
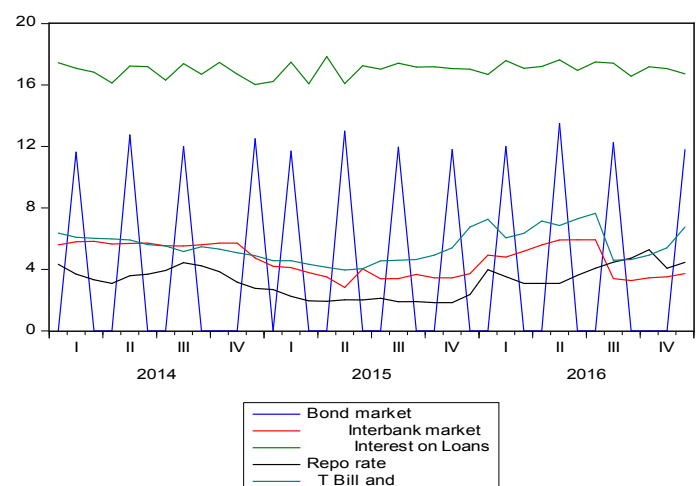
Government securities: interest rate volatility and interest income from government securities

The same Figure 2 shows the interest rate volatility of government securities and Figure 3 shows the interest income from government securities. We note that government securities include T-Bond, T-Bill and Repo market; we also note that income from T-Bill; T-Bond and Repo market are combined in BK annual reports. The researcher did not manage to get separate figures on income from each type of government security. Graph 2 shows that there is volatility on the rates of government securities (T-Bill, T-Bond and Repo), this volatility had a positive effect on BK income, meaning that income from government securities kept increasing despite

the volatility in the rates, this is confirmed by the Figure 3; from 2014-2016 income received from government securities has been increasing year after year. This is also confirmed by our respondents' views who confirmed that the second source of Bank's income is from government securities. Bank of Kigali like other commercial banks are considered as competitive bidders of government securities in Rwanda. BK preferred to increase their investment in government securities because of interest income they were getting from these risk-free investments.

Interest rate volatility on interbank market and BK interest income from interbank transactions

Interbank market is a financial system and trading of currencies among banks and financial institutions, excluding retail investors and smaller trading parties. While some interbank trading is performed by banks on behalf of large customers, most interbank trading takes place from the banks' own accounts. The same figures 2&3 show respectively the interest rate volatility of interbank market and the interest income that BK has been receiving from interbank transactions. The results from figure 2 show that there is volatility on interbank rates, however this is translated by a reduction of BK interest income from interbank transactions year on year. The views of respondents also shows that Banks do not prefer to invest on interbank market.
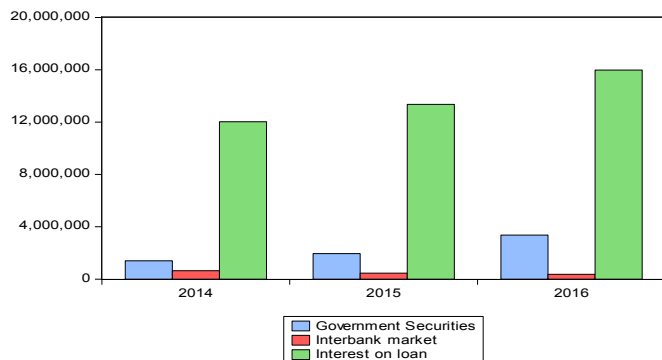

Source: Plotted by Researcher using E-views,2017

Figure 3. Volatility of interest rates in I&M bank

Figures 4 show that average lending interest rates of I&M Bank were volatile between 16% and 18%, while interest rates of T-Bonds fluctuated between 11.625% and 13.5%; T-Bills interest rates fluctuated between 3.96% and 7.645% ;Repo rates fluctuated between 1.831% and 4.441% and interbank market rates varied between 2.82% and 5.928%. The researcher was not able to find monthly data on interest income

from I&M Bank as it was the case for the interest rates to allow us compare the volatility with interest income. However we notice that lending interest rate did not fluctuate as much as interest rates on government securities. In fact the average lending interest rates are generally fixed and they fluctuate depending on type of loans, type of collateral and the level of risk the bank is exposed to. The interest rates of government securities are the ones that were volatile especially the short term rates i.e. Repo rates and T-Bills rates during the period under review, and this was due to the fact that they are regulated by the central bank. We note that for the same period interest income of I&M Bank continued to increase except for the interest income from interbank market which decreased during 2014 to 2016.

Source: Plotted by Researcher using E-views,2017

Figure 4. Interest income of I&M bank from 2014-2016

I&M lending rate volatility and interest income from loans

There is no big difference between the interest rate volatility of I&M bank and BK. The main source of income of both banks is from interest income from loans. Figure 4 shows that interest rates (I&M lending rates, Repo rate; T-Bill rate; T- bond rate and interbank rate) have been volatile during the past 3 years. During the same period, I&M Bank's interest income from loans have been increasing compared to other source of interest income (i.e. interest income from government securities and interbank transactions) as shown by the figure 5. Again, we note that I&M Bank (Rwanda) does not record separately income from different government securities in its financial statements, the researcher did not manage to analyze the effect of each components of government securities on interest income separately. Figure 4 shows that there is volatility in lending rates, despite this volatility, interest income from loans kept increasing year on year as shown by figure 5. The above figures 4 and 5 show that volatility of interest rate of I&M bank was relatively low, reason why interest income from loans kept increasing. Researcher confirmed the views of respondents that banks get more interest income from loans.

Government securities: interest rate volatility and interest income from government securities

The same figure 3&4 shows the interest rate volatility of government securities and figure 5 shows I&M Bank interest income from government security. Figure 4 confirms that there is volatility on all government securities including: T-Bond, T-Bill and Repo market. From Figure 4, we notice that even though interest rates on government securities have been volatile but the interest income from government securities kept increasing. This means that the decreasing of some digit

on interest rate on government securities did not affect the interest income from those securities as shown by figure 5; this may be explained by the volume of money invested in government securities. This confirms the views of respondents, Government securities are considered as a second source of commercial banks interest income. I&M bank also consider investing in government securities because it is a risk free investment.

Interest rate volatility on interbank market and I&M Bank interest income from interbank transactions

Figure 4 shows that there is volatility of interbank transactions rates shows I&M Bank interest income from interbank transactions. The results from figure 5 show that I&M Bank do not get much interest from interbank transactions. This may be explained by the fact that banks prefer to invest their money where they will get higher return.

Comparison of the effect of interest rate volatility on interest income of BK and I&M bank

Overall, there is no big difference between the interest rates volatility in I&M Bank and BK as shown by figure 2&4. As per Figure 2 interest rate volatility in BK, from year 2014Q4-2015Q2 we notice that the average lending interest rate was volatile as the minimum rate was 17% and the maximum was 18%. While the volatility of interest rate on bank loans in BK was not much significant as I&M bank, where the minimum rate in year 2014Q4-2015Q2 was 16% and the maximum was 18% in I&M Bank. This means that I&M bank recorded higher volatility in lending rates than BK during the same period. The volatility of lending interest rates in both commercial banks triggered a positive impact on interest income. The below table shows the comparison of the two commercial banks of loan income in Rwanda francs.

Table 4. Comparison of income from loans between I&M and BK (in Rwf)

Year	Bank	
	BK	I&M bank
2014	47,916,330,000	12,030,539,000
2015	56,380,332,000	13,356,933,000
2016	63,661,974,000	15,981,540,000

Source: BK and I&M financial statements, 2014, 2015 & 2016

The above table 4 indicates that there is a big difference of interest from loans between two commercial banks. This big gap on interest income from loan may be caused by different factors like: the size of bank in term, capital, number of customers, etc.

Table 5. Comparison of I&M Bank and BK income from government securities in Rwf

Year	Bank	
	BK	I&M bank
2014	3,221,607,000	1,396,165,000
2015	3,348,431,000	1,948,380,000
2016	8,248,484,000	3,363,724,000

Source: BK and I&M financial statement, 2014, 2015 & 2016

Above table 5 shows the comparison between the two banks in term of interest income from government's securities (T-bond, T-Bill and Repo market). The two banks show that their income increased from 2014-2016 but BK earned more income from government securities compared to I&M bank. This

means that BK buys more government securities than I&M bank. The rate of government securities is the same for all commercial banks in Rwanda, therefore the difference in income earned from government securities comes from the amount invested in these government securities. The figure 3 and figure 5 show that interest rates of government securities were volatile while bank income from government securities kept increasing. Generally, the higher the investment in government securities, the more interest income you get more.

Table 6. Comparison of bank income from interbank market in Rwf

Year	Bank	
	BK	I&M bank
2014	771,809,000	646,350,000
2015	238,092,000	456,699,000
2016	343,926,000	372,361,000

Source: BK and I&M financial statement, 2014, 2015 & 2016

Above table 6 shows that income BK and I&M Bank earned from interbank market in Rwanda for the last 3 years. The data from two commercial banks shows that for BK income from interbank transactions were volatile while for I&M Bank, they decreased consistently from 2014-2016. We notice that BK income from interbank transactions decreased in 2015 and in 2016 increased again. However, the earnings were not the same because their amount of investment was not the same. As show in the above table 17 I&M bank earned more income than BK because I&M bank preferred to invest more in interbank market than BK. As a conclusion researcher found that both commercial banks got more income depending on where they have chosen to invest more of their funds. The researcher found out that BK does not invest much in interbank markets, they prefer to invest more in loans and government securities where they got a lot of interest income, however I&M Bank invested more in Interbank market than BK. Both banks' main source of interest income is from loans, followed by government securities and lastly from Interbank market. We note that they are many factors that banks take into consideration before choosing where they want to invest their funds (loans, government securities or interbank markets).

VIII. Conclusion

The government regulates the business activities within their economy for diverse reasons. The government of Rwanda regulates the banking practice to ensure the consumers are protected from the practices of the banking institutions to promote growth and stability. It is due to the significance of the banks in their financial intermediation that the governments ensure to keep close watch of the financial institutions. The hypothesis verification proved that there is significant relationship between interest rate volatility and interest income of selected commercial banks in Rwanda. Researcher has reject HO1 and accept HO2, which is supporting the comparative significant relationship between interest rate volatility and interest rate income of selected commercial banks in Rwanda. Based on the research findings all the objectives have been achieved as shown in the summary.

X. Recommendations

Based on the findings in chapter four and conclusions above, the study recommends that commercial banks evaluate their lending rates properly to ensure that they have adequate loan disbursement but also high returns that would improve the interest income of commercial banks. This therefore means that commercial banks need to clearly evaluate their lending rates and the costs attached to the finances. The study also recommends that financial institutions increase their management efficiency because unless this is done, the high interest income earned from interest rate volatility could easily be wiped out by high operating costs. In order to adhere to recommended interest rate volatility ratios and earn optimal interest income, this study recommends that commercial banks accurately evaluate all factors influence the interest income applicants to ensure that the loss or bad investment practice are eliminated. Therefore, the government regulators should tighten its regulations on these factors to ensure that the interest rate in the economy is well contained. The quantity borrowed, operation costs, commercial bank negotiation power, credit contract enforcements, and credit monitoring technique are key ingredients in ensuring reasonably low interest rates and its volatility. Commercial banks ought to keenly look into the issues affecting these factors to ensure the interest rate levels and its volatility is contained in the economy.

REFERENCES

Barnea, A and Kim, N 2007. Interest Rate Margins:A Decomposition of Dynamic Oligopolistic Conduct and Market Fundamentals. *Applied Financial Economics*, 17 (6), 487-499.

Bikbov, L and Chernov, H. 2004. Term structure and volatility: Lessons from the eurodollar market. Working Paper , 10-11.

BNR. 2016. *Monetary Policy and financial stability statment.* Kigali: BNR.

Bondt, P and Barnea, R. 2002. Retail Bank Interest Rate Pass-Through:New Evidence at the Euro Area Level. *ECB Working Paper,* 136, 45.

Chernov C and Bikbov R. 2004. Term structure and volatility: Lessons from the eurodollar market. Working Paper, 10-11.

Chirwa W and Mlachila D. 2004. *Financial reforms and Interest Rate Spreads in the Commercial Banking System in Malawi.* Malawi: IMF Staff Papers, 51 (1), 96-122.

Claudio Borio, 2015. *Banking Sector Interest Rate Spreads in Kenya.* Kenya: Kenya Institute for Public Policy Research and Analysis.

Flannery T. *et al*. 1998. Market Interest Rates and Commercial Bank Profitability. *The Journal of Finance.*

Patra, H. and Gichuhi, P. 2010. *The impact of Bank Specific and Macroeconomic.*

Thakor, D and Greenbaum T. 1981. *The incidence of interest withholding taxes.* Nigeria.

Thygersa, S and al. 1995. *Management of Financial Institutions (1st ed.).* Harpe Collins:: College Publishers.

Weth S and Ataullah, 2002. *Economic Reforms and Bank Efficiency in Developing Countries:.* Mumbai: Indian Banking Industry.

****