

EFFECT OF INTEREST RATE SPREAD ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN RWANDA: A CASE OF COMMERCIAL BANKS IN RWANDA

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Abstract: The increasing propensity of commercial banks to take part in derivative activities is one of the notable developments in the present day financial markets. Latterly, the financial innovation improvements, deregulation and development of the financial markets, and banks' margins decrease, due to low-quality loan applicants, motivate the commercial banks to provide advanced services and products to expand their profits. Profits from traditional banking activities has been decreasing whilst the competitiveness of markets have been increasing thus forcing banks to undertake derivative activities. The objective of this study was to establish the effect of financial derivatives on the financial performance of commercial banks in Rwanda. To achieve this the study was guided by the following specific objectives; to determine how the risk management in derivatives affects the financial performance of commercial banks in Rwanda, to examine if efficiency in trading of derivatives affects the financial performance of commercial banks in Rwanda, to establish if price stabilization in derivatives affect the financial performance of commercial banks in Rwanda and to explore if price discovery in derivatives affect the financial performance of commercial banks in Rwanda. This study adopted a descriptive research design in soliciting information on effects of liquidity management on financial performance of commercial banks. The target population was 14 commercial banks in Rwanda. The sampling technique that was employed is simple random sampling and the sample size was 42 respondents. Primary quantitative data was collected by use of self-administered structured questionnaires. The researcher also used secondary data derived from the audited financial statement of the commercial banks for the period 2014 to 2016. The data collected was analyzed, with respect to the study objectives, using both descriptive and inferential statistics. The data was analyzed using descriptive statistics such as mode, median, mean, standard deviation. Multiple regression analysis was employed to determine relationship between liquidity management and financial performance of commercial banks in Rwanda. Data was presented in tables, charts, figures and mathematical expressions. Return on Assets (ROA) was used as the proxy for financial performance while financial derivatives, liquidity ratio and shareholders' equity ratio were the predictor variables. Content analysis was used to operationalize qualitative data and eventually was analyzed using statistical methods for inferential conclusions. F-test was used to test the significance of the overall model while significance of each specific variable was tested using T- test. Based on the research findings, it can be concluded that ownership structure, market structure and business risks play significant role in explaining interest rate spread. The study recommends that the government and policy makers should implement sustainable political and macroeconomic environment to boost investors' confidence in the banking sector which would go a long way in reducing interest rate spread. This study did not include all determinants of IRS and a further study is recommended to include other factors such as effects of information and communication technology on interest rate spread.

Keywords: Inflation rate, Financial performance, Commercial banks in Rwanda.

1. INTRODUCTION

1.1 Background

Commercial Banks play a pivotal role in the distribution and allocation of economic resources of a Country (Brock & Rojas-Suárez, 2008). Despite the increased trend toward bank disintermediation observed in many countries, the role of banks remains central in financing economic activity in general and different segments of the market in particular. In order to perform the intermediation function properly, banks must generate income sufficient enough to cover their operational costs incurred in the process. Despite the recent trends of financial disintermediation and the growth in market-based finance, the role of banks is still essential to the performance and operation of modern economies (Dietrich & Wanzenried, 2010). A sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system. Therefore, the determinants of bank performance have attracted the interest of academic research as well as of bank management, financial markets and bank supervisors.

The development of the financial sector is an important contributor to economic growth development (Afanasiyev *et al.*, 2012). Lack of real growth in the developing countries has been associated with repressed financial sector necessitating them to adopt liberalization policies in order to spur economic growth and development (Folawewol & Tennant, 2008). Financial liberalization entails the removal of repressive financial sector policies such as fixed interest rate and credit rationing deepen the financial sector opening it to competition, thus leading to competitive deposit and lending rates paving the way for the development of the financial sector and ultimately economic growth. Commercial banks are thus vital in the development of financial sector in the sense that they promote economic efficiency through financial intermediation (Tarus *et al.*, 2012). One of the indicators used to measure the efficiency of banks is interest rate spread. Its high value is often associated with the presence of inefficiencies in the banking system, due to the fact that costs incurred as a result of the inefficiency are transferred to bank customers by charging high interest rates (Samahiya, & Kaakunga, 2012).

According to Sologoub (2006) highlights that high which demonstrates inefficiency in the role of intermediation played by Commercial banks. Therefore, it can be concluded that interest rate spread is sufficient to act as a measure of intermediation efficiency among commercial banks. Interest rate spread is defined as the difference between lending and deposit interest rates. This spread is beneficial to a country in determining the financial efficiency (Hassan & Khan, 2010). Alternatively, a high interest rate spread could mean unusually low deposit rates discouraging savings and limiting resources available to finance bank credit (Mustafa & Sayera, 2009).

High interest rate spreads could be a reflection of a low level of financial sector development or inefficiency (Folawewol & Tennant, 2008). Despite the structural adjustment reforms leading to liberalization undertaken by many countries in sub Saharan Africa, high interest rate spreads continue to face these countries. Information to do with the efficiency of financial intermediation, monetary policy impact and profitability of the banks, influence the interest rate spread (Were & Wambua, 2014).

The financial system stability assessment on Rwanda conducted by the IMF in 2011 acknowledged positive developments in Rwanda's banking industry such as increased entry of new banks, growing competition as well as the decline in profit margins and effective spreads for Rwanda's banks. This was due to a number of reforms introduced by the Government of Rwanda since March 1995 which led to noticeable development in financial intermediation. However, the interest rate spread in Rwanda has remained quite volatile and relatively higher (Kigabo & Barebereho 2007)

1.2 Statement of the Problem

Interest rate determines the profitability of a commercial bank among other factors. High interest rates have remained a macroeconomic problem that has been hard to eliminate. Despite liberalizing the money markets Rwanda, interest rates spread continues being high. One of the expected benefits of financial liberalization and deepening of the financial sector is the narrowing of the interest rate spreads – the difference between the interest rate charged to borrowers and the interest rate paid to depositors.

In the past one-year interest charged was fairly high in some banks 30% while interest earned by savers remains low, while interest rate charged was increasing interest rate earned remained static this resulted to a very wide spread over 20% does this mean when interest rate increases bank are ultimate beneficiary.

Many studies have been carried out on interest spread and its impact on financial performance, most studies conclude interest rate spread is as result of inefficiency concluded by Hassan and Khan (2010) argued that as lending rates go up, banks on average attract a riskier pool of projects that require higher returns on investment. Higher interest rates, they argued also force many creditworthy borrowers to opt out of borrowing, explaining the fall in domestic credit to the private sector in Rwanda. The above analysis, Hassan and Khan's (2010) was supported by Hamid (2011) on a study on effect of interest rate spread in developing countries which showed that the share of non-deposit-based funding is positively and significantly correlated to interest rate spreads. The study also found evidence that the share of deposits held in foreign banks is negatively correlated to the volume of credit to the private sector.

Most of the studies do not indicate the extent of the impact, that is does interest rate spread have strong or weak relationship to banks financial performance. If impact of interest rate spread to banks financial performance is established policy makes a clear picture of what would happen if spread is regulated. Most of conclusions are drawn when considering determinant of interest rate spread. This study answered the following question: Does interest rate spread impact banks financial performance?

1.3 Objectives of the study

1.3.1 General objective

The general objective of the study was to establish the effect of interest rate spread on financial performance of commercial banks in Rwanda.

1.3.2 Specific objectives

The following specific objectives guided the study:

1. To determine the effect of inflation rate on the financial performance of commercial banks in Rwanda.

2. CONCEPTUAL FRAMEWORK

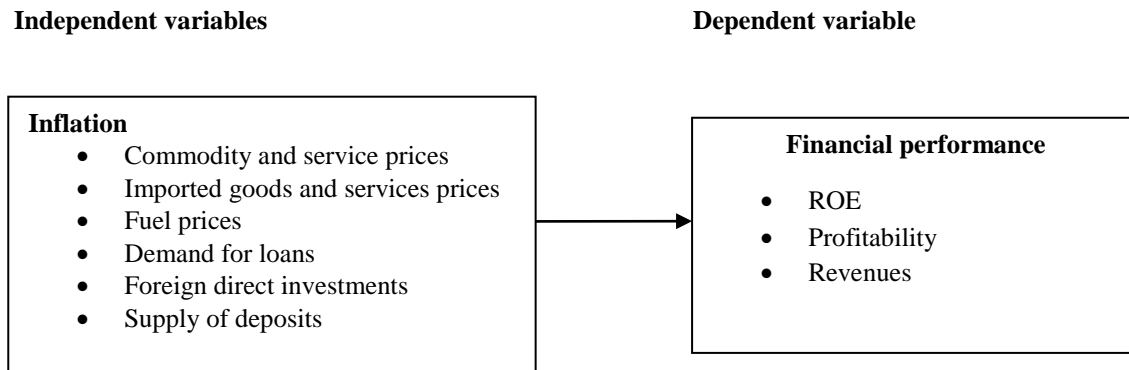


Figure 2.1 Conceptual framework

3. RESEARCH METHODOLOGY

3.1 Target population

Zikmund, Babin, Carr and Griffin, Zikmund (2010) describe a population (universe) as any complete group for example, of people, sales territories, stores, or college students that share some common set of characteristics. Beck and Polit (2013) refer to the term population as the aggregate or totality of those conforming to a set of specifications.

BNR (2017) identified the total number of commercial banks licensed to operate in Rwanda as fourteen in number and one mortgage finance institution. The target population for this research comprised of 180 management and supervisory employees from the fourteen commercial banks licensed by National Bank of Rwanda (BNR) as listed in appendix II. These included the managing director, credit manager, branch managers finance manager and operations manager.

3.2 Sample and Sampling Technique

A list containing all sampling units is known as sampling frame (Kothari, 2009). Sampling frame is a list of all the population subjects that the researcher targeted during the study (Sekaran& Bougie, 2011). The first level of sampling frame for this study was the list of licensed banks as provided by the BNR as at 31st December 2017 which are fourteen in number. The second sampling frame consisted of all management and supervisory employees in all the licensed commercial banks.

3.3 Sample size

From the study population of 180 employees, a sample size of 125 employees calculated using Slovin’s (1960) formula were selected to the study:

$$n = N / (1 + Ne^2)$$

Where;

n is the sample size,

N is the population size (180)

e is the desired level of precision (0.05)

$$n = \frac{180}{1+180(0.05)^2} = 125$$

Table 1: Sampling Frame

Area of Operation	Population	Sample
Managing directors	14	10
Finance managers	14	10
Operations managers	14	10
Credit managers	14	10
Branch managers	14	10
Supervisory employees	90	75
Total	180	125

4. RESEARCH FINDINGS AND DISCUSSION

This study sought to investigate relationship between inflation and interest rate spread among commercial banks in Rwanda. The indicators considered were such as commodity and service prices, supply of deposits, imported goods prices, concentration and sizes of foreign direct investment and their effects on IRS.

Table 2: Descriptive of Inflation and Interest Rate Spread

Inflation Parameters	1	2	3	4	5	Mean
Prices of imported goods and services impact on interest rate spread	3%	6%	0%	79%	12%	3.89
Commodity and service prices in the market influence interest rate spread	0%	6%	0%	82%	12%	3.99
Fuel is a key component of inflation in Rwanda and also the inflation rate	0%	3%	0%	85%	12%	4.06
Demand for loans influence interest rate spread	0%	3%	0%	79%	19%	4.13
Foreign direct investments lead to high inflation and affect interest rate spread	0%	0%	13%	82%	6%	3.93
Political environment in the economy has an effect on inflation.	0%	3%	0%	85%	12%	4.06
Speculation of the market prices is a major determinant of inflation.	0%	3%	0%	85%	12%	4.06
Supply of deposits in commercial banks influences inflation.	0%	3%	0%	85%	12%	4.06

Data on table 2 show responses on statements regarding the effects of inflation on interest rate spread among commercial banks in Rwanda. The data show that 82% of the respondents agreed that commodity and service prices in the market influence interest rate spread of the banks positively while 12% strongly agreed, 0% were indifferent and 6% of the respondents disagreed. Regarding whether foreign direct investments lead to high inflation and affect interest rate spread of banks, 82% agreed, 6% strongly agreed while 13% were neutral. On whether supplies of deposits in commercial banks influences inflation among commercial banks, 6% were indifferent, 0% agreed while 80% agreed and 14% strongly agreed. Regarding the statement that the higher the inflation rate the higher the interest rate spread, 87% agreed, 6% strongly agreed and 6% were neutral. The mean score of responses regarding inflation and interest rate spread was 82% strongly agreed, 12% agreed while 4% were neutral. Most banks (it turned out) structure their interest rate policy under impression that it follows the inflation rate and therefore observes the behavior of inflation.

Folawewo and Tennant (2008) found that the extent of government crowding out inflationary level was an important determinant of interest rate spreads in SSA countries. Hassan and Khan (2010) studied determinants among commercial bank spread in Pakistan and they considered macroeconomic indicators (e.g. inflation, real GDP growth and interest rate). Further, in line with studies (Maudos & Guevara, 2004; Williams, 2007; Wong & Zhou, 2008; Khawaja & Din, 2007) for Pakistan on banking spreads in different countries considering the impact of the macroeconomic environment, they found that both real GDP growth and interest rates positively affect the level of banking spreads in Pakistan. Aikaeli, Mugizi and Ndanshau (2011) studied interest rate spreads in Tanzania and they found out that an unstable macroeconomic environment such as inflation impacts positively on the interest rate spreads in several ways: poor economic performance is likely to reduce the ability of bank debtors to honor their debt obligations.

Table 3: Pearson Correlation on Inflation and Interest Rate Spread

		Inflation	Interest Rate Spread
Inflation	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	80	
Interest Rate Spread	Pearson Correlation	.129**	1
	Sig. (2-tailed)	.000	
	N	80	80

** . Correlation is significant at the 0.01 level (2-tailed).

Correlation coefficient indicates the measure of linear relationship between two variables. Table 4.7 shows there is a positive linear relationship between inflation and interest rate spread. Table 4.7 on the other hand shows the Pearson correlation coefficients between the independent variable inflation and the dependent variable interest rate spread. It shows a significant positive correlation between inflation and interest rate spread of 0.129.

5. CONCLUSIONS

From the research findings presented above, inflation generally has no effects on interest rate spread among commercial banks in Rwanda. Majority of the respondents found inflation as just being a phenomenon which is being misused in the economy where the majorities do not understand it while other factors which matters such as increase in production are ignored. The findings revealed that inflation has very small influence on interest rate spread among commercial banks in Rwanda as per the summary above.

5.1. Recommendations

Interest rate is inevitable in the financial sector since it is the only way of rewarding depositors and meeting the costs in commercial banks. The difference between lending and deposit rate can however be controlled. This study makes several recommendations to players in the financial sector like the government, policy makers as well as commercial banks. From these research findings, the study recommends that;

1. The government should ensure existence of stable political environment, fuel prices, commodities and services prices as they were mentioned as major components of inflation, which would contribute immensely in reducing interest rate spread among commercial banks in Rwanda. Conversely these changes will contribute to better and affordable business environment which in turn boosts the financial services sector.

2. Commercial banks should also explore internally and industry driven strategies to mitigate against or counter some of the bank-specific factors associated with higher spreads such as diversification of products to reduce reliance on interest income and the associated risks and also investment in cost-saving and efficient forms of technology to reduce operating costs.

5.2. Areas for further research

A study on the effects of information and communication on interest rate spread is highly recommended to establish whether ICT reduces the cost of operation in banking sector.

The high beta coefficient of constant in this study also shows that there are other factors which were not included in the statistical model used which could be influencing the behavior of interest rate spread among commercial banks in Rwanda. Further studies in the area of interest rate spread in developing countries like Rwanda are therefore highly recommended.

REFERENCES

- [1] Aboagye, A., Akoena, T. O., Antiwi-Asare and Gockel A. (2008). "Explaining Interest Rate Spreads in Ghana", African Development Review, 20 (3), 378-99.
- [2] Afanasieff, T. S., Lhacer, P. M., & Nakane, M. I. (2012). *The Determinants of Bank Interest Spreads in Brazil*. Banco Central do Brasil
- [3] Ahokpossi, C. (2013). *Determinants of Bank Interest Margins in Sub-Saharan Africa*. IMF Working Paper
- [4] Beck, C. and Polit, D. (2013). *Nursing Research: Principles & Methods*, 7th Edition, Williams and Wilkins, Lippincott, United States of America.
- [5] Beck, Thorsten and Heiko Hesse, (2006). "Bank Efficiency, Ownership and Market Structure: Why are Interest Rate Spreads so High in Uganda?" World Bank Policy Research (Working Paper No. wps4027). Washington D.C.: The World Bank.
- [6] Bekan, S. (2011). *Measurement of financial performance*. Islamabad: Pakistan Institute of Development Economics.
- [7] Birungi, P. (2005) "Determinants of Interest Rate Spreads in Uganda," University of Pretoria, South Africa, Mimeo
- [8] Bourke, P. (2009). "Concentration and other Determinants of Bank Profitability in Europe, North America and Australia," *Journal of Banking and Finance* 13, 6579.
- [9] Brock, P., & Rojas-Suárez, L. (2008). *Understanding the Behavior of Bank Spreads in Pacific Island Countries: Some Evidence from Fiji*. USPEC Working Paper Series.
- [10] Chenn, M. (2011). *Interest rate spread*. Washington, D.C.: International Monetary Fund, Monetary and Capital Markets Dept.
- [11] Corb, H. (2012). *Interest rate swaps and other derivatives*. New York: Columbia Business School.
- [12] Dietrich, A., & Wanzenried, G. (2011). Determinants of bank profitability before and during the crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money*, 21(3), 307-327. doi:10.1016/j.intfin.2010.11.002
- [13] Folawewol, A. O., & Tennant, D. (2008). *Determinants of interest rate spread in sub-Saharan African countries: a dynamic panel analysis*. A Paper Pre-pared for the 13th Annual African Econometrics Society Conference, 9–11 July. Pretoria, Republic of South Africa.
- [14] Gambacorta, L. (2004). *How Banks Set Interest Rates?* National Bureau of Economic Research Working Paper 10295, Cambridge.
- [15] Gavin, A. (2010). *High yields: the spread on German interest rates*. Cambridge, MA: National Bureau of Economic Research.
- [16] Hair, J. F., Jr., Black, W. C., Babin, B. J., and Anderson, R. E. (2010). *Multivariate Data Analysis*. Upper Saddle River, NJ: Pearson Prentic Hall
- [17] Hassan, M. & Khan, B. (2010). *What Drives Interest Rate Spreads of Commercial Banks in Pakistan?* Empirical Evidence Based on Panel Data. SBP Research Bulletin, 6(2).

- [18] Hawtrey, K. and Liang, H. (2008). Bank Interest Margins in OECD Countries, *North American Journal of Economics and Finance*, 19, 249–260.
- [19] Ho, T. and Saunders, A. (1981). "The Determinants of Bank Interest Margin: Theory and Empirical Evidence". *Journal of Financial and Quantitative Analysis*, XVI (4), 581–599.
- [20] Hualan, C. (2011). *Banks financial performance*. Washington, D.C.: International Monetary Fund.
- [21] Jackson, S. (2009). *Research Methods and Statistics: A Critical Thinking Approach*, 3rd Edition. United States of America. Waldsworth Cengage Learning,
- [22] Kigabo RT, Barebereho J (2007). "Determinants of banking interest rate spreads in Rwanda ". Economic Review n° 002, National Bank of Rwanda
- [23] Kothari, C. (2014). *Research Methodology: Methods & Techniques*, 2nd edition. New Delhi, India. New age International Publishers
- [24] Lavrakas P. (2008). *Encyclopedia of Survey Research Methods*, Vol. 1 & 2. Los Angeles, United States of America. Sage Publications
- [25] Mannasoo, K. (2012). *Determinants of Bank Interest Spread in Estonia*, (Working Paper No 1/2012) EESTIPANK
- [26] Mugenda, O. & Mugenda, A. (2008). *Research methods quantitative and qualitative approaches*. Nairobi: Acts Press
- [27] Mustafa, K. & Sayera, Y. (2009). *An Analysis of Interest Rate Spread in the Banking Sector in Bangladesh*. The Bangladesh Development Studies, 32(4)
- [28] Mweha, F. M. (2012). *Regulatory Reforms and their Impact on the Competitiveness and Efficiency of the Banking Sector: A Case Study of Rwanda*. In Murinde, V (ed.), *Bank Regulatory Reforms in Africa*. Hampshire: Palgrave Macmillan.
- [29] Ndung'u, S. and Ngugi, R. (2000). *Banking Sector Interest Rate Spread in Rwanda*. Macroeconomic and Economic Modelling Division. Rwanda Institute for Public Policy Research and Analysis. KIPPRA Discussion Paper No 5, March 2000. Nairobi, KIPPRA
- [30] Newing, H. (2011). *Conducting Research in Conservation: Social Science Methods and Practice*. Routledge, New York, United States of America.
- [31] Ngugi, R. (2013). *Interest rate spread in Rwanda*. Nairobi, Rwanda: Rwanda Institute for Public policy research and analysis
- [32] Samahiya, M., & Kaakunga, E. (2012). Determinants of Commercial Banks' Interest Rate Spread in Namibia: An Econometric Exploration. *Botswana Journal of Economics*.
- [33] Sanya, S. and Gaertner, M. (2012). *Assessing Bank Competition within the East African Community*, (IMF Working Paper WP No 12/32). Washington D.C. World Bank
- [34] Sekaran, U. & Bougie, R. (2011). *Research Methods for Business: A Skill Building Approach*. 5th Edition. Delhi. Aggarwal printing press,
- [35] Siddiqui M. A. (2012). Towards Determination of Interest Spread of Commercial Banks: Empirical Evidences from Pakistan, *African Journal of Business Management* 6(5) 1851 – 1862.
- [36] Sologoub, D. (2006). *The Determinants of Bank Interest Margins and Profitability: Case of Ukraine*.
- [37] Tarus, D., Chekol, Y. B., & Mutwol, M. (2012). *Determinants of Net Interest Margins of Commercial Banks in Rwanda*. A Panel Study. *Procedia Economics*
- [38] Were, M., & Wambua, J. (2014). *What factors drive interest rate spread of commercial banks? Empirical evidence from Rwanda*. *Review of Development Finance*.
- [39] Wong, M. and Zhou, K. (2008). "The Determinants of Net Interest Margins of Commercial Banks in Mainland China". *Emerging Markets Finance & Trade*, 44, 41-53.
- [40] Yang, K. and Miller, G. (2008). *Handbook of Research Methods in Public Administration*. New York, Taylor & Francis Group,
- [41] Zikmund, G., Babin, J., Carr, J. and Griffin, M. (2010). *Business Research Methods* 8th Edition, South-Western, Cengage Learning.