THE DETERMINANTS OF INTEREST RATE SPREAD IN SELECTED DEPOSIT MONEY BANKS IN NIGERIA

[1]Sanni, M., [2]Kasali, R. K., and [3]Fakunmoju, S. K.

[1&2] Accounting & Finance Department, Kwara State University, Malete, Kwara State, Nigeria

[3]Accounting & Finance Department, Fountain University, Osogbo, Osun State, Nigeria

Corresponding Author: Kasali, R. K. (+234-8039669399; kayus111@gmail.com)

Abstract

In Sub-Saharan Africa (SSA), financial intercessor is low and unmatched with other developed and emerging economies with high level of financial intermediaries. It is shown that there is high interest spread in Nigeria in spite of financial liberalization. The study investigated the determinants of interest rate spread. A panel regression analysis was employed to determine the effects of bank-specific, industry-specific, macro-economic and governance risk factors on interest rate spread involving 13 selected deposit money banks in Nigeria from 2009 to 2018. The Generalized Method of Moment (GMM) approach was employed. The study established that interest rate spread is determined by bank specific and macroeconomic factors mainly for risk aversion, interest risk and operating cost, monetary policy rate and inflation. The study recommends adoption of internal resolution discipline approach by the CBN and Federal Government in curtailing excessive risk taking of systematically important banks (highly capitalized banks) that translate into high interest spread.

Keywords: Bank-specific factor, Governance risk factor, Industry-specific factor, Interest rate spread and Macro-economic factor

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1.0 Introduction

It is a fact that the main function of deposit money banks is intermediation role in the economy, which majorly involves acceptance of deposit and lending. This important banking activity necessitates financial costs and benefits, and the distinction between the lending interest and the interest on deposit (time, demand and saving) is known as the interest rate spread, also known as the banker's mark-up. High spreads are generally thought to reflect the inefficiencies of a financial system, which constitutes the cost of financial intermediation (Shayanewako & Tsegaye, 2018). The profit that banks and other financial institutions make from financial intermediation accommodations is the spread between lending and deposit rate. This is made through maturity transformation and, thus, occupies the core of modern banking system (Shayanewako & Tsegaye, 2018). When the spread is too high, it not only daunts potential savers with low returns, it also impedes credit expansion. In the past, financial economists believed that broadening interest rate spread was more pronounced in the developing countries because of ineffective regulatory frameworks governing the operations of their banking system (Apergis & Cooray, 2018). The global financial crisis of 2008, however, revealed that high interest rate spread was a global problem and the spread rose expeditiously in the United Kingdom, Europe and Africa in the period after the crisis (Apergis & Cooray, 2018). In the period of 1999-2006, the average interest rate spread in Latin America reached 16.19% (with apexes of 42% in Brazil and 26% in Uruguay) compared to 5.02% in India, 6.21% in South East Asia, 3.26% in the Euro area and 2.9% in the US while 38.62% in Africa continents (Chortareas, Garza-Garcia, & Girardone, 2016).

Interest rate spreads are often utilized as proxies for the efficiency of financial intermediation. Africa remains one of the most financially under-developed components of the world and its financial under-development is frequently associated with a country's inability to mobilize adequate magnitudes of savings to satisfy the demand for credit (Andrianova, Baltagi, Demetriades, & Fielding, 2015). This, however, portends high caliber of inefficiency in financial intermediation in African countries, which is tied to high borrowing prices and interest rate spreads compared to other developed economies. In Sub-Saharan Africa (SSA), financial intermediation is very low compared to other regions of the world; as a result, bank lending is low and interest rate spreads are high compare to the developed and emerging economies (Ahokpossi, 2013; Owolabi & Fayemi, 2017).

In Nigeria, lending rate has remained sedulously high over the last two decades, raising concern among policy makers, investors and other economic agents about financing sustainable economic growth (Owolabi & Fayemi, 2017). Many reasons for the high lending rate include: tight monetary policy and structural rigidities in the economy, leading to high cost of raising funds by Deposit Money Banks (DMBs), which are adjudged to be responsible for high interest rate spread among others (Udom, Agboegbulem, Atoi, Adeleke, Abraham, Onumonu, & Abubakar, 2016). This high lending rates within Nigeria financial system remained under double digit over the years while consolidated deposit rate remained at single digit. This, consequently, resulted into sizably voluminous interest rates spread from 24.7% in 2017, 27.02% in 2018 while 27.32% in 2019 (the Central Bank of Nigeria (CBN), 2019). Albeit, CBN gives commercial banks free will to determine their interest rates after taking industry categorical macroeconomic and governance factors into consideration. These factors have led to disparities on what is received on deposits compared with what is paid on loans; thus, causing sizably voluminous spread, i.e. lending rate-deposit rate (Owolabi & Fayemi, 2017; Quartey &Afful-Mensah, 2014).

Udom*et al.* (2016) accentuated that high interest spread adversely affects economic magnification, especially in environments where banks are the principal, if not the sole source of external finance. Udom*et al.* (2016) and Owolabi and Fayemi (2017) established that interest rate spread, which mimics interest margin averaged 20.51 percentage points, compared with average consolidated deposit rate of 3.42 per cent from January 2011 to June 2014 and additionally the interest rates spread in 2017-2019 were 24.47%; 27.02% and 27.32% respectively. This is considered high with deleterious effects and implicative insinuations for preserving mobilization and investment in the Nigerian economy. In a country like Nigeria, a high interest rate spread raises the cost of credit, restricting the access of potential borrowers to credit markets; thus, minimizing investments and inhibiting growth potential of the economy (Aigbovo&Osifo, 2015; Owolabi & Fayemi, 2017).

Sundry studies (Tarus&Manyala, 2018; Obeng &Sakyi, 2017; Iftikhar, 2016; Islam& Nishiyama, 2016; Leykun, 2016; Udom et al., 2016; Rebei, 2014; Were &Wambua, 2014; Ahokpossi, 2013; Tarus & Manyala, 2018; Haruna, 2012; Akinlo*et al.,* 2012; & Aboagye, Antwi-Asare, & Gockel, 2008 among others) examined the determinants of interest rate spread and margin. These studies employed bank concrete, industry categorical and macroeconomic variables, but failed to consider how governance variables proxied by agency costs quantified as staff emolument plus directors' fees (agency cost) expressed over total assets of the bank that determine interest rate spread within and outside the Nigerian context. Predicated on the problem and gap identified, this study examined the effect of bank categorical factors, industry concrete factors, macroeconomic factors and governance risk factors on interest rate spread among deposit money banks in Nigeria.

2.0   Literature Review

This section focuses on the underpinned theory and synchronisation of empirical studies. The underpinned theory was bank dealership theoretical model.

2.1   Theoretical Background

The study anchored on bank dealership theoretical model developed by Ho and Saunders (1981). The bank dealership model of bank interest margins or spreads viewed banks as a risk-averse dealer. Under this model, commercial banks are "dealers" who demand deposits from the public and grant loans. The stochastic and

asynchronous nature of deposit supplies and loan demands expose the bank to interest rate risk (Fofack, 2016). Consequently, the banks require positive interest rate spread to cushion itself against the skepticality. This skepticality occasioned by the manner in which deposits come and the manner the customers seek loans implicatively insinuates that the bank faces an inventory risk, which has to be rewarded through interest rate spread (Were & Wambua, 2014). Moreover, it was shown that this pristine spread depended on four factors: the degree of managerial risk aversion, the size of transactions undertaken by the bank, bank market structure and the variance of interest rate.

The model was upbraided on the ground that it does not explicate why some banks are truculent in their jeopardy taking than others by Angbazo (1997), he used augmented dealership model. Base on this premise, dealership model was elongated by many researchers and some of the posits made by Ho and Saunders (1981) were relaxed variables such as sundry types of loan; money market interest rate; default jeopardy, interest rate risk and their interaction; operating costs and non-traditional activities were included by Allen (1988), Mcshane and Sharpe (1985), Agbazo (1997) and Carbo and Rodriguez (2007).This model was further expanded by Mensah and Abor (2014); Ahokpossi (2013) to capture the impact of governance variables and efficiency on interest rate spread.

2.2 Empirical Review

There have been numerous studies on determinants of interest rate spread in international economics. This largely focused on developed countries like (Apergis& Cooray, 2018; Fofack, 2016; Angbazo, 1997; Hannan, 1991), Latin American countries (Chortareas et al, 2012; Gelos, 2009), Asia (Islam & Nishiyama, 2016; Lin *et al.,* 2012) and, more recently, Sub-Saharan African countries (Leykun, 2016; Chirwa and Malchila; 2004). Tarus and Manyala (2018) investigated the determinant of bank interest rate spread in Sub-Saharan Africa using the sample of twenty countries. They used fixed effect method of estimation and found that inflation rate inversely and significantly affects interest rate spread, likewise operating costs and bank concentration have direct (positive) and significant effect on interest spread, government effectiveness, rule of law and political stability are negatively related Interest Rate Spread (IRS). Angbazo (1997) and Ahokpossi (2013) indicated that default risk is positively associated with bank interest margin in US banks.

Were and Wambua (2014) examined what factors drive interest spread of commercial banks in Kenya while Tarus*et al.* (2012) similarly studied the determinant of net interest margins in commercial banks in Kenya. They both used pooled, panel, fixed and random effect method of estimation and confirmed that bank-specific factors play a significant role on interest spread while growth and market concentration give negative effect in case of Tarus*et al.* (2012) and Rebei (2014), Solomon Island, and Perera, Skully, and Wickramanayake (2010). Garza-Garcia (2010), Obeng and Sakyi (2017) and Ahoagye*et al.* (2008) studied macroeconomic determinants of interest spreads and explained interest rate spreads respectively. Their findings revealed that market power, bank size, staff cost, administrative costs, extent of bank risk aversion and inflation significantly and positively affect interest spread while excess bank reserve do not.

In Nigeria, Akinlo and Owoyemi (2012), Hesse (2007) and Haruna (2012) examined the determinants of interest rate spread, using a sample of 12 selected banks in Nigeria from1986-2007. The study employed CRR, Average capital employed to average total assets, loan to deposit ratio, non-interest expense to average total assets, minimum Rediscount Rate, GDP, developments stock, treasure certificate and inflation as determinants of interest spread. Pooled OLS, fixed-effects and random effects were used as method of estimation. The study concluded that CRR, average loans to average total deposit, remuneration to total asset and GDP have positive effect on interest spread. Similarly, Kelilume (2014), Aigbovo and Osifo (2015) and Udom*et al.* (2016) examined modeling Banks' interest margins in Nigeria, using a sample of 18 banks between 2010: Q1 to 2014: Q2. The study used panel regression with pooled OLS, fixed effect and random effect method of estimation. The study was anchored on SCP theory and concluded that staff cost exerts high impact on interest margin whereby banks transfer their staff operating costs to customer by either imposing exorbitant lending rates or low deposit rates, or both.

The source of motivation for this study comes from variable gaps of governance factors, that is, the variables among empirical literature on the determinants of interest spread in commercial banks within and outside

Nigerian context. Similarly, there is no known study, to the best of researcher's knowledge, which has employed bank efficiency as a control variable in determining interest rate spread among deposit money bank in Nigeria. This, however, constitutes control variable gaps. Based on these empirical gaps, i.e governance variable factors and control variable gaps, this study intends to fill the gap in literature by examining the determinants of interest spread in Nigeria.

3.0   Methodology

This study employed *expost facto* research design and focused on the determinants of interest rate spread of 13 commercial banks in Nigeria within the period of 10 years from 2009 to 2018. Interest rate spread represents the dependent variable while bank-specific factors, industry-specific factors, macroeconomic factor and governance risk factor represent independent variables. The study employed dynamic GMM to examine the determinants of interest rate spread in deposit money bank in Nigeria. In this study, thirteen (13) commercial banks were selected due to non-availability of data on study variables of other commercial banks. The study employed secondary data, which were sourced from the thirteen (13) banks annual reports and accounts, the CBN Bulletins, NDIC and National Bureau of Statistics within the period of 2009 to 2018.

3.1   Model Specification

In line with were and Wambua (2014) and Perera*et al.* (2010) model, interest rate spread is modelled to internal (bank-specific) and external (industry-specific and macroeconomic) factors. The study variables were also modelled based on dealership theory (Ho & Saunders, 1981) for the theory asserted that the relationship between interest rate spread and market concentration proxied by industry specific factors depend on bank efficiency. The model specification for the determinant of interest rate spreads is of the form;

$$NR_{it} = \beta_0 + \beta BS_{it} + \beta_2 Z_t + \beta_3 M_t + \mu_t \quad \text{.......................................} \quad (3.1)$$

Where;

NR_{it} =   Interest rate spread
BS_{it} =   Bank-specific factors
Z_t =   Industry specific factors
M_t =   Macroeconomic factors
μ_t = Error Term

Equation (3.1) is modified to include one period lag of the dependent variable; the model incorporates lagged dependent variable among the regressors to account for time persistence in the structure of the dependent variable (Chortareas*et al.,* 2012; Udom*et al.,* 2016).

$$NR_{it} = \beta_o + \beta_1 NR_{i,\,t\text{-}1} + \beta_2 BS_{it} + \beta_3 Z_t + \beta_4 M_t + U_t \quad \text{.........................} \quad (3.2)$$

$NR_{i,\,t\text{-}1}$ = one lagged dependent variable.

Equation (3.2) is further expanded to suit the objective of this study and in line with dealership theory that governance risk factor and efficiency ratio affect interest rate spread. The study employed efficiency ratio as a control variable.

$$NR_{it} = \beta_0 + \beta_1 NR_{i,\,t\text{-}1} + \beta_2 BS_{it} + \beta_3 Z_t + \beta_4 M_t + \beta_6 GV_t + \beta_6 ER_t + U_t \text{ ----------- } (3.3)$$

Where:

NR_{it} =   Interest rate spread
BS_{it} =   Bank-specific factors
Z_t =   Industry specific factors
M_t =   Macroeconomic factors
GV_t =   Governance variable
ER_t =   Efficiency ratio

U_t =Error Term

4.0   Research Finding/Result

For bank-specific variables, Table 2 shows that average interest rate spread for the deposit money banks in the sample was 23.18 with standard deviation of about 2.03. The period witnessed a minimum interest rate spread of 20.3 and maximum of 27.02. Non-performing loans averaged 0.27 about 0.27 percent of total loan. It has a spread of about 1.84 percent of total loan. The period was seen with the least non-performing loans of zero percent of total loan and the highest of 21.01 percent of total loans. Average risk aversion for the banks in this sample over the period in concern is about 0.17 percent, with standard deviation of about 0.19 percent, minimum of -0.32 percent and maximum of 1.55 percent. Liquidity ratio measured by the ratio of liquid assets to total assets averaged 3.46 percent, with sample spread of about 34.78 percent, minimum of 0.01 percent and maximum of 397 percent.

Table 2: Summary Statistics of Variables

Variable	Mean	Std. Dev.	Min	Max
IRS	23.18	2.03	20.30	27.02
NPL	0.27	1.84	0.00	21.01
RAV	0.17	0.19	-0.32	1.55
LIQUIDR	3.46	34.78	0.01	397.00
IRR	2.16	1.89	-1.32	15.93
LOAN	N698.8bn	N550.2bn	N0.432bn	N2.138tr
HHI	0.02	0.23	0.00	2.63
INF	11.90	2.76	8.00	16.50
GDP	4.64	2.73	-1.50	7.85
MPR	11.43	2.84	6.00	14.00
ECOMP	0.11	1.05	0.00	12.00
OP	0.80	0.51	0.01	3.60

Source: Authors' Computations (2020)

The deposit money banks in this sample have average interest rate risk of 2.16, with standard deviation of 1.89. The period has a minimum and maximum interest rate risk of -1.32 and 15.93 respectively. Loan size averaged 698.8 billion naira, having a sample spread of 550.2 billion naira, minimum of 0.432billion naira and maximum of 2.138 trillion naira.

For the industry-specific variable included in this study, Hirschman-Herfindahl Index, which is an index for the market structure, has an average value of 0.02, with standard deviation of 0.23. The minimum index during this period was zero while the maximum index was 2.63. As to the macroeconomic variables, inflation rate averaged 11.9% over the period in concern, with standard deviation of 2.76%. The period witnessed the lowest inflation rate of 8.0% and highest inflation rate of 16.5%. Economic growth of Nigeria, measured by growth rate of real GDP, has an average of 4.64% during this period, with sample spread of 2.73%. A negative growth of 1.5 was witnessed in the economy, representing the lowest growth during the period while a growth of 7.85% represents the highest growth rate attained during this period. Monetary policy rate in the country averaged 11.43%, with standard deviation of 2.84%, minimum of 6.0% and maximum of 14.0%.

The included governance variable proxy by executive compensation has an average of 0.11%, with standard deviation of 1.05% and minimum and maximum of zero and 12.0% respectively. Operating cost has an average of 0.8%, with standard deviation of 0.51%, minimum of 0.01% and maximum of 3.6%.

Correlation Matrix of the Selected Variables

Given the information presented above about the summaries of the variables included in this study, it is also important to examine the relationship that exists among the variables, particularly, to identify those variables with high correlation, which might lead to severe multicollinearity in the model of the study. A quick check on the variables of this study as to the relationship that exist among them through a correlation analysis presented in Table 2, which shows that majority of the relationships have low correlation coefficients, specifically, with values below 0.6. The exception to this is in the case of the relationship loan size has with each of non-performing loans, Hirschman-Herfindahl Index and executive compensation, which are all up to 0.8.

Table 3 Correlation Analysis

	IRS	NPL	RAV	LIQ	IRR	LOA	HHI	INF	GDP	MPR	COMP	OP
IRS	1.00											
NPL	-0.09	1.00										
RAV	0.12	-0.06	1.00									
LIQ	0.17	-0.01	-0.02	1.00								
IRR	0.02	-0.09	-0.21	0.03	1.00							
LOAN	0.29	-0.81	0.06	0.04	-0.02	1.00						
HHI	-0.09	0.60	-0.07	-0.01	-0.08	-0.79	1.00					
INF	0.36	-0.02	0.07	0.01	-0.11	0.05	-0.03	1.00				
GDP	-0.51	0.10	-0.06	0.01	-0.01	-0.29	0.09	-0.45	1.00			
MPR	0.60	0.00	0.02	0.08	0.10	0.24	0.02	0.03	-0.60	1.00		
COMP	-0.10	0.50	-0.06	-0.01	-0.08	-0.80	1.00	-0.03	0.09	0.02	1.00	
OP	0.07	-0.12	-0.05	-0.03	-0.07	0.11	-0.14	0.04	0.02	-0.11	-0.14	1.00

Source: Authors' Computations (2020)

The correlation coefficients in these cases exceed the threshold of 0.8 described by Asteriou and Hall (2016).The inclusion of these variables together might lead to severe multicollinearity in the model. As a result of this, the regression model of this study excluded loan size in order to hedge over this possible problem. Excluding loan size would eliminate this problem since it has high correlation with the others and its exclusion is affordable since non-performing loans remains in the model.

Panel Generalized Method of Moments (GMM) Estimation of Interest Rate Spread Determinants.

Table 4 presents the system GMM regression result to examine the determinants of interest rate spread of deposit money banks in Nigeria. The considered factors include bank-specific factors (i.e. credit risk or non-performing loans, risk aversion, liquidity risk and interest rate risk), industry-specific factor (i.e. Hirschman-Herfindahl Index), macroeconomic factor (i.e. inflation, growth of GDP and MPR), and governance factor (i.e. executive compensation). The model also controlled for operation cost.

Table 4: System GMM Regression Result

VARIABLES	Coefficient (standard error)	p-value
L.IRS	0.605***	0.000
	(0.0349)	
NPL	1.505	0.104
	(0.926)	
RAV	3.266***	0.001
	(1.002)	
LIQUIDR	0.00109	0.753
	(0.00345)	
IRR	0.176***	0.004
	(0.0610)	
HHI	49.03	0.360
	(53.53)	
INF	0.147***	0.000
	(0.0338)	
GDP	0.0258	0.445
	(0.0338)	
MPR	0.489***	0.000
	(0.0419)	
ECOMP	-13.38	0.211
	(10.71)	
OP	0.918***	0.007
	(0.338)	
Constant	0.0382	0.982
	(1.666)	
Wald Chi-squared	7454.69***	
p-value	0.000	

Source: Authors' Computations (2020).

As for the fitness of the overall model, the result shows that the overall model is in good fit, with Wald Chi-squared value of 7454.69, which has a p-value of 0.000. The statistically significant Wald chi-squared value indicates that the variables of the model are jointly significant; hence, the overall model is significant.

Examining the individual variables of the model, first, from the bank-specific factors, the result shows that all bank-specific factors have positive coefficients. However, only the coefficients of risk aversion and interest rate risk are statistically significant. This indicates that non-performing loans and liquidity risk have no significant impact on interest rate spread of deposit money banks but risk aversion and interest rate risk have significant impact on interest rate spread of these banks. The result indicates that a percent point increase in risk aversion of these deposit money banks will result to approximately 3.27% point increase in their interest rate spread. It also indicates that a percent point increase in interest rate risk will lead to 0.176% points increase in interest rate spread.

Examining the industry-specific factor measured by the Hirschman-Herfindahl index, the result shows that industry-specific factor does not determine the level of interest rate spread of deposit money banks in Nigeria. This is shown by the statistically insignificant coefficient of Hirschman-Herfindahl index in the result. As to the macroeconomic factors, all the included variables have positive coefficients. However, only the coefficients of inflation rate and monetary policy rate are statistically significant. This implies that only inflation rate and monetary

policy rate determine the level of interest rate spread of deposit money banks in Nigeria while GDP growth does not. The result, therefore, indicates that a percent point increase in inflation rate will lead to an increase in interest rate spread of deposit money banks by 0.147% points. Similarly, the result indicates that a point increase in monetary policy rate will lead to an increase of 0.489 % points in interest rate spread.

The included governance factor, executive compensation, is seen with a positive but insignificant coefficient in the result. This indicates that executive compensation does not have significant influence on interest rate spread of deposit money banks in Nigeria. The result also shows that the control variable, operating cost, has a positive and significant coefficient. This indicates that operating cost has a significant positive impact on interest rate and a point increase in operating cost of these banks will lead to a rise in their interest rate spread by about 0.918 % points.

Table 5: Regression Diagnostic results

	Autocorrelation Test		Over-identifying restriction	
	Z	p-value	Chi-squared	p-value
AR(1)	-1.632	0.103	10.693	0.555
AR(2)	1.367	0.172		

Source: Authors' Computation (2020).

Table 5 presents the results of the regression diagnostics in order to examine the validity of the results presented in Table 5. The relevant tests in this regard are the Arellano-Bond autocorrelation test and the Sargan test of over-identifying restriction. The autocorrelation test helps to establish that the model is free from the problem of serial correlation and, hence, the underlying assumption of the test that there is no autocorrelation in first-differenced errors is not rejected. On the other hand, the Sargan test of over-identifying restriction helps to establish that the relevant restrictions placed on the instruments in order not to be over-identified are valid and, hence, its hypothesis of valid restriction is not rejected. The result shows that the hypothesis of the autocorrelation test could not be rejected, both for the first and second-order. This indicates that the model is free from autocorrelation. Similarly, the hypothesis of the Sargan test could not be rejected, indicating that the restrictions on the instruments are valid. These regression diagnostics, therefore, imply that the model valid and necessary conclusions could be drawn from it.

5.0   Discussion of Results and Implication of Findings

The study attempted to analysis the determinants of interest rate spread in deposit money banks in Nigeria. The results obtained suggest that bank specific and macroeconomic factors play a significant role in explaining variations in interest rate spread in Nigeria based on the result of F-test of joint significance depicted in table in table 6 below.

Table 6: F-test of Joint Significance

Factors	Indicators	F/z-statistic	p-value	Remark
Bank-Specific Factors	NPL Risk Aversion Liquidity Risk Interest Rate Risk	16.75	0.002	Rejected
Industry Factors	Hirschman-Herfindahl Index	0.92	0.360	Not rejected
Macro-economic Factors	Inflation GDP growth MPR	380.25	0.000	Rejected
Governance Factors	Executive compensation	-1.25	0.211	Not rejected

Source: Authors' Computations (2020)

The first and third hypotheses of this study were verified using the F-test of joint significance. This is because a number of indicators are grouped together under the bank-specific factors and the macroeconomic factors. On the other hand, since the industry-specific and governance factors have only one indicator each, the second and fourth hypotheses were verified using the z-statistic for the individual variables in the regression result. The joint test of significance conducted for the bank-specific and macroeconomic factors have statistic values of 16.75 (with p-value of 0.002) and 380.25 (with p-value of 0.000) respectively. This indicates rejection of the null hypothesis that these two sets of factors do not have significant impact on interest rate spread of deposit money banks. Therefore, bank-specific factors and macroeconomic factors are significant determinants of interest rate spread of deposit money banks. This finding is in line with Ahokpossi (2013), Rebei (2014), Tarus and Manyala (2018). Only the coefficient of risk aversion and interest rate risk are statistically significant of bank specific variables. A more risk averse bank will have more equity in its capital structure and will, thus, charge wider spread in order to earn the higher return that equity suppliers demand. This reasoning is consistent with the work of Aboagye et al. (2008) and Islam & Nishiyama (2016) as well as dealership theory.

Similarly, the positive significance relationship of interest rate risk connotes the demand for higher interest rate risk premium with attendant hike in interest spread. This result is consistent with Agbazo (1996) and Lin *et al.* (2012). Inflation and monetary policy rate are the only positive significant macroeconomic risk factors. Higher inflation is likely to increase the interest spread because bank will adjust their interest to compensate for interest rate premium. This is in line with Tarus and Manyala (2018) but contradicts the work of Were and Wambua (2014). Monetary policy tightening of the CBN raises MPR and short term interest rates, which make it more costly for banks to get funds, thereby passing these costs to borrowers through high interest spread. This result is consistent with Were and Wambua (2014).

On the other hand, the individual variable test of significance in the regression result for the industry-specific and governance factors have statistic values of 0.92 (with p-value of 0.360) and -1.25 (with p-value of 0.211) respectively. This indicates non-rejection of the null hypothesis that these two sets of factors do not have significant impact on interest rate spread of deposit money banks. Therefore, industry-specific factors and governance factors are not significant determinants of interest rate spread of deposit money banks. The implication of this study was that if bank specific factors and Macro-economic Factors were given maximum consideration in determining the interest rate spread, there might be huge significant increase in interest rate spread between deposit money bank and bank customer, thus, deterring customer savings, investment and loan extension to customer as well as increase bank illiquidity.

6.0   Conclusion and Recommendation

Based on the findings, the study concludes that bank specific factors and macroeconomic risk factors influence the behavior of interest rate spread in Nigeria while industry factors and governance factor do not affect interest rate spread of commercial banks in Nigeria. Based on these findings, the study recommended that

- the Central Bank of Nigeria and Federal Government should adopt internal resolution as a discipline for highly capitalized banks (too big to fail and systematically important banks) rather than regular bailout with tax payers money, which incentivize them to take excessive risk and consequently pass the risk to customers in form of high interest rate spread;

- the CBN needs to revisit the current threshold on MPR setting to achieve a closest target consistent with country's overall goal of macroeconomic policy and consequently avert rising interest rate spread;

- the CBN should have a policy that will not allow any bank to transfer its financial recklessness in form of high operating cost to consumers, making evidence of cost effectiveness a condition to have subsidiaries, raising of capital and distribution of dividends;

- there should be internationally recognized benchmark for interest just as it is obtainable in non-performing loan;

- bank regulators and board of directors should design transparent and executive compensation   model that more incentive compatible in setting executive compensation and perks; and the CBN is advised to revisit Keynesian recommendation on monetary policy stimulus in its policy stance.

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