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RELATIONSHIP BETWEEN COMPETITION AND DIVERSIFICATION AMONG DEPOSIT MONEY BANKS IN NIGERIA (2013-2022)

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ABSTRACT

The study evaluated the relationship between bank competition and income diversification of deposit money banks in Nigeria over the period 2013-2022. It adopted a longitudinal research design using secondary data. The population of the study were the entire 13 deposit money banks listed on the floor of Nigerian Exchange Group, in which 12 were purposively selected. Data on variables such as: income diversification and competition were sourced from sampled banks' audited financial reports, the Nigerian Exchange Group Facts book and Statistical Bulletin from Central Bank of Nigeria. Data collected were analysed using appropriate descriptive and inferential statistics. Data were analyzed using simple percentages, correlation and regression analysis. The result revealed that competition ($t = 2.24$; $p < 0.05$), Elerner ($t = 3.20$; $p < 0.05$), risk taking ($t=2.43$; $p < 0.05$) had positive and significant relationship on income diversification. This study concluded that competition encourages income diversification among Deposit Money Banks in Nigeria

Keywords: *Bank Competition, Income Diversification, Deposit Money Banks*

INTRODUCTION

In the face of banks trying to outperform and be successful, Deposit Money Banks (DMBs) have to learn and re-orientate themselves. This will help them to meet up with the changing environment and withstand the competition in the industry and equally aid their intermediation function effectively (Azan & Siddiquoui, 2012). It is pertinent to note that banks are not left out in the globalization and advancement in information and communication technologies, this has aided competition by bringing about technological innovations and development of internet banking, Automated Teller Machines (ATMs), Unstructured Supplementary Service Data (USSD), Mobile banking, telephone banking, differentiation of product, Point Of Sales terminal, increased use of credit and debit card, among others. It is thus worthy to note that competition stimulates economic growth and it allows banks to improve on the welfare of the customers.

Before now, the traditional function of a bank was deposit taking and lending out of loans. During that period, the major source of banks income was interest based. But recently, it has been confirmed by Brunnermeier, (2009); Milne, (2009) and OECD (2011); Bijoy and Samaresh (2020) that, competition has increased among banks. Hence, there is need for banks to shift from interest-based income to look for another line of business that can fetch them additional income. Bijoy and Samaresh (2020) stated that, for a financial institution to compete effectively, it must move towards non-traditional sources of income. This will help the bank to gain and maintain a large market share (Goddard, Mckillop & Wilson, 2008). Moreso, diversification is used for hedging purpose (Froot & Stain 1998), it also improves operational and income efficiency of banks (Landskroner, Ruthenberg & Zaken 2005). Banks are therefore expected to think about innovations and use income generated from the interest accrued on loans and advances disbursed to their customers to venture into other line of business. With this, more money will be generated into the system of the banks and this will help to mitigate the risk of losses.

In Nigeria, the review of annual reports and financial statements of listed DMBs revealed that banks have started engaging in other activities outside deposit taking. This is an indication that banks have identified the riskiness of devoting their operations only on deposit takings and giving loans and advances. Loan and advances potentially have negative impact on the banking industry earnings because of high default rate which might make the loan and advances become bad, irrecoverable or doubtful. In order for banks to be financially stable, they need to focus less on their traditional intermediary functions. Diversification of banks' portfolios is always as a result of their response to competition in the environment in which they operate. Hence, for a bank to be financially stable, it must be able to divert its income to profitable lines of business, which could be insurance underwriting, investment banking, and/or venture capital. This will bring about enhancement of growth in commission and fee-based income from services and activities linked to non-traditional retail banking services and they will be able to engage in a healthy competition with one another.

Competition and diversification have increased among banks, as banks have started searching for income outside interest income, which can be used to finance their competitive strategies. The quest to outperform one another has re-orientate the banks. There is a gap in literature as to how competition affects diversification of bank's income. The extant literature have a number of empirical studies that examined how Competition affects and determines bank financial stability (Schaeck & Cihak, 2014; Leroy & Lucotte, 2017; Noman, Gee, & Isa, 2017) bank performance regulation (Fonseca & Gonzalez, 2010; Agoraki *et al*., 2011) and efficiency (Bertrand, Schoar, & Thesmar, 2007; Arrawati, Misra, & Dawar, 2015). Studies on the nexus between competition and diversification among banks have not been explored by previous researchers, despite the fact that the issue has become important after the financial crises of 2007-2008, the incident has increased competition among the surviving banks and has made them to drift away from reliance on interest based income thus looking for other sources of income to complement their interest based income.

Competition-diversification nexus among DMBs has been underexplored, the only known research work on the relationship in the banking industry is Capraru, Ihnatov and Pintilie (2018) in which they reported in their work on European Union banks that competition enhances diversification, hence there is need to carry out research on the relationships between the two variables among Nigerian Deposit Money Banks. This study will the gap by answering the research question " what is the effect of competition on income diversification". To answer this research question, the study adopted a bank level data of comprehensive sample of 12 DMB listed on the Nigeria exchange group over 2013- 2022 which consisted a balanced panel of 120 observation and sourced variables from the audited financial statement of the sampled banks. The study used Lerner Index and HHI to measure competition and diversification respectively to examined the effect of competition on diversification of banks income. The designed econometric was regressed using panel regression model. The result showed that competition significantly affected diversification positively.

LITERATURE REVIEW

Competition

Competition basically means a condition where some set of persons or firms, out of eagerness to outperform and be successful than one another become rivals. Savage and Small (1967) described competition as a process which is dynamics, a circumstance whereby optional opportunities are presented to potential and actual customers, and the information about those opportunities is disseminated. Under a perfect competition, varieties of product or services will be made available to customers who will be at liberty to choose. Competitors are those people who have made and provided alternatives opportunities for actual and potential customers. Park (1998) described "to compete" and "competition" as the same thing. He opined that competition refers to price slashing, creating aggressive awareness about a product & investing in research and development of product. He emphasized that competition is a situation of rivalry among firms for survival of the fittest.

Competitions among banks are important for efficiency in the provision of financial service which will bring about a quality in the financial products and innovations in the system (Claessen & Laeven, 2004). More also, Bikker and Spierdijk (2009) emphasized that effectiveness, efficiency, financial stability, provision of social welfare, interest rate reduction, accessibility to standard financial services are derived as a result of competition. While Keeley (1990) reported a contrary evidence, which states that competition among banks will destabilize the financial stability, as competing firms might engage in a risky project which at the end of the day may not bring favorable return.

Diversification

According to Andrew (1980) and Berry (1975), diversification is described as a means a firm adopt for the purpose of expanding from its core business into other productive market. Johnson *et al.* (2006) also defined diversification as a form of strategy for growth adopted by an an organization to aid its migration away from its traditional market. Hall (1995) described diversification as a strategy that a company adopts for expansion of company's market, sales and profit improvement. Raghunathan (1995) described diversification as a degree to which organizations do different types of business simultaneously.

Diversification strategies are the approaches that can be used by firms for expansion purpose which might be, going into a new market, adding another line of business, introduction of new services or stage of production in order to add values to the existing business. Though competition in an industry is a major factor that forces an organization to diversify so as to capture and remain in the market. Contrary to this, diversification is adopted in most enterprise for the purpose of utilization of the surplus or idle resources. Diversification can also be used for stabilization of sales which will make it easy for an enterprise to cope with fluctuations in demands. Diversifications also ensure survival of a firm.

It is worthy to note that diversification strategies should be selected with proper and extensive market analysis with precaution and due care. Kotler and Keller (2006) provided three approaches to diversification strategies which are concentric diversification i.e when an organization develops or acquires new related products or services to move into one or more new markets; horizontal diversification, here, The strategy is used when a firm is providing a new and unrelated product or services to their existing customers. And lastly, conglomerates diversification, This strategy is adopted when an entire new product is made. It is when a firm enters into a new product or services that is beyond its currents and present capabilities

Competition- diversification relationship

As a result of spillover effect of economic meltdown and financial crunch that occurred during 1980's and 1990's and the most recent global financial crises of 2007-2009, diversification of banks' income has increased. In addition to this, The banking industry in Nigeria has witnessed series of major experiences ranging from the merger and acquisition of DMBs from the total of 89 banks down to 25 banks in the year 2005 to restructuring of the banking sector. All these experiences have affected the DMBs in Nigeria, thus, bringing down the total number of banks in Nigeria. The consequence of the reduction in resulted to a concentration of banks making it an oligopolistic market of service providers doing almost the same thing of financial intermediary. This has thus increased and motivated competition.

However, for a bank to mitigate the increased competition, most banks have diversified their portfolio away from their traditional function of intermediary activities into new product such as brokerage services, banc-assurance, venture capital etc. According to portfolio theory, stand-alone investment is not good for a business, thus multiple sources of income for diverse investment are better for risk management. Traditional banking activities of loan lending and deposit taking has made the profit of banks to erode, because , most of the banks performed the same activities. Hence, this has made them to turn to non-traditional activities (Edwards & Mishkin 1995).

Competition among banks have necessitated them to look for alternatives (Bamigboye *et al*., 2022), by either engaging in alternatives business activities; pursuing new off- balances sheet activities; or spreading and expanding their lending activities into riskier areas. As part of banks quest to compete among one another, they have grown their spread and their networks by opening branches across all states. Some have also taken their services to the grassroots by empowering point of sales (POS) operators to take deposit and give cash on their behalf.

Caparu, Ihnator and Pintilie (2018) worked on competition–diversification relationship, the research was conducted on banks who were members of European Union States. The result showed that the diversification is stimulated by competition because banks keeps searching for addition, income sources in order to ensure that their competition strategies are financed in order to satisfy the interest of the stakeholders. However, the agent i.e.. the managers with the intent of trying to reduce the firm's specific risk which could affect the shareholder's wealth, may want to diversify. Similarly, the principal i.e. the shareholder, will not want the firm to engage in corporate diversification, if they can do it more conveniently and profitably by diversifying their personal investment portfolio and lastly the creditors to the firm will want and encourage firms to diversify into a safe and profitable investment in order to prevent cash crunch that may delay repayment or bring about outright inability of the firm to pay. In all the aforementioned stakeholders, shareholders are the only one who would prefer diversifications of firms, desirable. Lepetit *et al*. (2008) researched on effect of product diversification by banks on the loan pricing and interest margins. 602 commercial banks were sampled for a period between 1996-2002 In their report, when revenue generation of a financial institution is dominated by fee based activities, low interest will be charged and probability of borrowers default will be underpriced.

There are, however, scanty literature that have examined how competition affect diversification in region like Africa, an no known study have been carried out on this area in Nigeria. Soedarmono *et al*. (2013) opined that risk taking behavior of banks will be lowered with the increase in market competition which will result in less default risk and hence bring about stability. In addition, Biter *et al*. (2016), reported that concentration of market will increase the fragility of banks. Inverse relationship was reported to exist between competition and risk taking among banks by Fu *et al*. (2014) and Yaldiz and Bazzen (2010). A further study into whether market competition have effect on risk of banks showed that positive significant relationship also exist between the two variables(Leroy & Luccopte, 2017, Hellmann et al., 2000, Repullo 2004).

Literatures have identified several methods through which DMBs can spread their risk such as international diversification(Curi, Lozano-Vivas, & Zelenyuk, 2015), revenue diversification Sissy, Amidu & Abor (2017), geographical diversification (Deng & Elyasiani, 2008), assets diversification (Anggraeni, Basuki, & Setiawan, 2021), product diversification (Ebrahim . & Hasan .2008) and income diversification (Anggraeni, Basuki, &Setiawan, 2021). However, the focus of this study will be income diversification

METHODOLOGY

In order to achieve this objective, secondary data were gathered from the published financial statements, the Nigerian Exchange Factbook, and Central bank statistical Bulletin of the purposively sampled 12 DMBs from the population of 13 banks listed on Nigerian Exchange Group (NGX). The period covered by this study was 2013 – 2022.

Pre Estimation Tests

Descriptive Statistics

Obtaining the descriptive statistics of model variables prior to estimation is a means to identify the degree of outliers in a variable. The study reveals the descriptive statistics such as mean, median, standard deviation, maximum, minimum, Jarque-Bera, kurtosis and skewness.

Correlation Analysis

Correlation analysis was also carried out among the variables used in achieving the objective. The pairwise correlation result showed that the variables did not have strong relationship with one another and therefore there is less likelihood of encountering the problem of multicollinearity. Although, the variables was furthered subjected to variance inflation test.

Table 1: Pairwise correlations

Variables	HHI	Bank_Size	Efficiency	GDP	Infl	Lerner	Performanc	Risk_takin	Elener
(1) HHI	1.000								
(2) Bank_Size	0.267*	1.000							
	(0.003)								
(3) Efficiency	-0.054	-0.206*	1.000						
	(0.549)	(0.019)							
(4) GDP	-0.221*	-0.369*	-0.003	1.000					
	(0.013)	(0.000)	(0.975)						
(5) Infl	0.257*	0.284*	-0.007	-0.424*	1.000				
	(0.004)	(0.001)	(0.939)	(0.000)					
(6) Lerner	-0.020	-0.403*	0.245*	-0.089	-0.007	1.000			
	(0.822)	(0.000)	(0.005)	(0.319)	(0.938)				
(7) Performance	-0.066	-0.144	-0.045	0.107	-0.170	-0.022	1.000		
	(0.465)	(0.103)	(0.616)	(0.224)	(0.053)	(0.804)			
(8) Risk_taking	0.191*	-0.066	0.009	-0.116	0.122	-0.009	-0.111	1.000	
	(0.032)	(0.455)	(0.917)	(0.190)	(0.168)	(0.918)	(0.211)		
(9) Elerner	0.107	-0.279*	0.016	-0.129	0.118	0.472*	0.015	-0.276*	1.000
	(0.231)	(0.001)	(0.860)	(0.148)	(0.184)	(0.000)	(0.870)	(0.002)	

**** p<0.01, ** p<0.05, * p<0.1*

Source: Author's Computation (2023).

Panel Unit Root

Panel Unit Root test was carried out using the Levin, Lin & Chu t* , Im, Pesaran & Shin W-stat and ADF - Fisher Chi-square by presuming common unit root or individual unit root. Result of the panel unit root test reveals that all variables were stationary at level. Therefore, the study can estimate the model coefficient with the use of panel least square method.

Variance Inflation Factor

The result of variance inflation factor(VIF) was to further assess the degree of multicollinearity among the variables, having estimated the correlation analysis. The test result as reported indicated that all variables reported VIF less than 10. It implies that they are not statistically correlated with each other, hence, the assumption of no multicollinearity will not be violated.

Bank specific factors, macro-economic variables and business cycle variables are adopted from various studies reviewed in the literature (Kasman & Kasman, 2015; Tabak, Fazio, & Cajueiro, 2012). Model 1 was used to establish the competition-diversification relationship.

$$Diversification_{it} = \beta_0 + \beta_1 Competition_{i,t-1} + \theta Bank\ Controls_{i,t-1} + \varphi Macro\ Controls_{t-1} + \varepsilon_{it} \ldots\ldots 1$$

In model 1, the subscript i & t refers to bank and time respectively. The model explains the effect of competition on income diversification, in which bank specific and macro-economic variables served as the controlling variables.

For the purpose of further interaction between the variables, this study estimated the dynamic panel data model as:

$$Diversification_{it} = \alpha + \beta competition_{it} + \theta competition^2._{it} + \gamma bank\ specific\ variables_{it} + \delta macro\ economics\ variables_{kt} + \varepsilon_{it} \ldots\ldots 2$$

The model 3 was further broken down as stated in the model below

$$HHI = \propto + \beta_1\ lerner_{it-1} + \beta_2 Elerner_{i,t-1} + \beta_3 performance_{i,t-1} + \beta_4 banksize_{i,t-1} + \beta_5 efficiency_{i,t-1} + \beta_6 risk_{i,t-1} + \beta_7 GDP_{k,t-1} + \beta_8 INF_{k,t-1} + \varepsilon_{it} \ldots\ldots 3$$

HHI was used to measure Diversification for bank i in time t; the main independent variable i.e competition, was proxied by Lerner index for bank i at time t, where Lerner represented bank-level indicator calculated using difference between price and the marginal cost as a percentage of price using fixed effect regression. However, the Elerner that was used to measure $\Theta competiton^2$ is a bank-level efficiency i.e. adjusted indicator of competition that exists among banks calculated as the difference between price and marginal cost as a percentage of price adopting a stochastic frontier analysis approach.

Bank specific variables are variables such as Performance estimated by return on Assets; Bank size which represents log of total assets, Efficiency is measure by cost to income ratio , while risk is measured by share of impaired loans in total loan.

The macro variables are vector of variable for the country k that include the logarithm of GDP growth and Inflation.

DISCUSSION OF FINDINGS

The regression result of the relationship between bank competition and income diversification is displayed in Table 2. Hausman test was carried out in order to test the best model assumption between random effect and fixed effect. The test revealed that random effect is the best model because the prob-value of the test is > 0.05. Also, the Lagrange multiplier test as presented in Table 2 revealed that random effect is better than the pooled OLS. Competition variables were Lerner and Elerner and income diversification was captured by HHI. Result indicated that four variables were statistically significant at 5%. The overall coefficient to determination of the model showed that 50.08% of the variation in income diversification was explained by the explanatory variables and f-value of 19.78 indicated that the model is statistically significant.

Lerner had positive relationship with the income diversification of the banks It exhibited statistical significance at 5% level with statistics of (coef = 0.5775 t=2.2499 and prob =0.0261). This result corroborate the apriori expectation of the model specification, which implies that, it is expected for firm to diversify when their industry is highly competitive in order increase their earnings. This result implied that competition among banks in developing/emerging economies compel them to diversify both across and within non-interest generating activities (Leroy & Luccopte, 2017; Hellmann *et al.*, 2000; Repullo, 2004). In the same line, Elerner had positive relationship with the income diversification of the firms, The variables reported 5% level of significance with statistics of (coef= 2.2127,t=3.2053, p=0.0017). DMBs that have lower market power diversify more in order to gain extra income for improvement of their market position in the economy. while On the contrary, DMBs that are leaders in the market are conservative and always conserve their financial resources by engaging in less risky traditional alternative strategies. The results support the findings of Capraru *et al*. (2018), Nguyen *et al*. (2012); Nguyen *et al.* (2016).

Also, bank size and risk taking of the sampled banks also contributed to their income diversification tendency. The result showed that bank size aided the income diversification with coefficient of 2.3151 (t-value=2.1224, prob=0.0359). Thus, Bank size positively relates to non-traditional activities. This implies that, banks have more experienced expertise and resources to earn increasing non-interest income. This is supported in the study of DeYoung & Rice (2004) and Lepetit *et al*. (2008).

In the same vein risk taking reported a coefficient of 6.4153, this is in line with the apriori expectation and statistically significant at 5% level(t-value=2.4348,prob =0.0164).

Table 2: Regression Estimate of relationship between bank competition and income diversification

	Pooled OLS Model			Fixed Effect Model			Random Effect Model		
	Coeff.	**t-value**	**prob**	**Coeff.**	**t-value**	**prob**	**Coeff.**	**t-value**	**prob**
LERNER	0.2003*	2.0394	0.0438	6.4189	1.1282	0.2617	0.5775*	2.2499	0.0261
ELERNER	2.6059*	2.6059	0.0103	1.5304	1.5704	0.1193	2.2127*	3.2053	0.0017
PERFORMANCE	0.0264	0.3682	0.7133	0.0459	0.6025	0.5481	0.0364	0.5114	0.6100
BANK_SIZE	2.3671*	3.1112	0.0023	2.8146*	3.0774	0.0027	2.3151*	2.1224	0.0359
EFFICIENCY	0.0074	0.2048	0.8380	0.0037	0.1001	0.9204	0.0059	0.2195	0.8266
RISK_TAKING	6.2897*	3.0422	0.0029	3.3821	1.4532	0.1491	6.4153*	2.4348	0.0164
GDP	3.8919	0.1805	0.8570	15.1340	0.7074	0.4808	3.0948	0.1057	0.9160
INFL	25.5953	1.1439	0.2550	36.5430	1.6792	0.0961	26.6630	0.8460	0.3992
C	-46.3862*	-2.7823	0.0063	-56.4134*	-2.8579	0.0051	-45.4076	-1.8505	0.0667
R-squared	0.5935			0.3824			0.5008		
Adjusted R-squared	0.5388			0.2659			0.4467		
F-statistic	23.5402			13.2824			19.7776		
Prob(F-statistic)	0.0000			0.0000			0.0000		
Hausman Test	3.5019, p=0.6916								
Lagrange Multiplier	2.835(p=0.0022)								

Source: Author's Computation (2023).

CONCLUSION AND RECOMMENDATIONS

As the results of this study show, diversification of income among DMBs in Nigeria is motivated by competition among the participants. This makes banks that operate in a competitive and diversified environment to be associated with less risky loan portfolio to bring about financial stability. This evidence further supports the view that competition drives income diversification for DMBs. When there is competition, DMBs tend to look for alternative sources of income through alternative investments.

This paper also provides valuable insights for regulatory authorities, banking supervisors and market participants about the role of competition in income diversification. The study recommends that policy makers in Nigeria should prevent excessive concentration of banks to encourage and provide for a competitive environment to bring about diversification to help stabilize financial system of the economy. The regulatory bodies should be cautious when approving takeovers, mergers and acquisitions. Financial stability due to a competitive environment will lead banks to engage in financial innovations by creating new financial products, services or processes—all adding to future financial stability and growth for the economy.

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