

# Market power of deposit money banks and economic growth in Nigeria

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## ABSTRACT

Focus was on the relationship between Market Power of Deposit Money Bank's and the Nigerian Economy for the period 1981-2020. Market power of Deposit Money Banks was proxied by Lending Rates, Deposit rates, Savings Rates and Interbank rates, while the Nigerian economy was proxied by Growth rates of Real Gross Domestic Products. Secondary data was obtained from the website of Central Bank of Nigeria statistical bulletin. Pretest was carried out using Augmented Dickey- fuller (ADF) test statistic to test for unit root. A mix order of integration was observed. The ARDL was thereafter used to estimate the equation, while the bounds test result revealed the long run relationship. The ARDL result revealed that at short run, there was no significant relationship between Market Power of Deposit Money Banks and Real Gross Domestic Products in Nigeria. The bounds test results shows that the long run relationship was not strong. These results indicates that Deposit Money Banks in Nigeria do not have market power over prices of their products and services. Hence a perfect market exists in the banking system which is not controlled by one or few banks which may control prices with the view of making high profit. Thus, the banking system is highly concentrated and regulated. The study concludes and Recommends that Lending rates, Deposit rates, Savings rates and interbank lending rates should be regulated by the monetary authorities to ensure stability in the economy. There should be free entry and exit of Deposit Money Banks who meet up with capitalization requirements. Savings rate could be encouraged with its positive outlook at lags one and two.

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## 1. INTRODUCTION

In most economies where there are market powers being exercised by banks, the prices of banking products and services are determined by the banks in the absence of regulation, perfect competition, supervision and control by the regulatory authorities. This leads to zero competition and supernormal profits to the banks. The desire of most deposit money banks is to dominate the market by large market share and control prices of banking products and services. An economy dominated by a single Deposit Money Bank, would be at the mercies of the bank in terms of monopolistic desires. Furthermore, with just two banks in an economy, being oligopolistic in nature, the two dominant banks are bound to influence the prices of banking products and services together with supernormal profits, restrictions on entry and exits, less government control and regulations. Elena and Suarez (2013) believe that bank market power may be different across countries depending on bank market regulation and institutional development. Many scholars believe that a competitively efficient financial system is a precondition for economic changes towards growth and development in a developing country like Nigeria (Poshakwale and Qian, 2009). A perfect competitive banking industry features large concentration of banks, with free exit and entry, competitive pricing, high competition, strong regulation, supervision and control, thus market power is eroded. Therefore, banking market power works in the presence of weak institutions to reduce asymmetric information and hence, agency costs between banks and firms' owners (Fernandez, Gonzalez and Suarez, 2010). Low concentration in a market, according to Andi (2012), will result to a positive impact on market efficiency according to Structure-Conduct-Performance (SCP) approach, in which the performance of a market depends on its structure. The more concentrated a market is, the greater the ability of a firm to increase the price above the marginal cost, reflecting a higher market power. This higher market power indicates lower competitive level. The level of competition in a market using market power measurement, has been analyzed as a major focus in industrial economic studies, including the level of competition in the banking industry. As an industry that plays intermediary role between surplus spending units and deficit units, the banks play a very vital role in supporting the process of development. In a situation of imbalance or uncertainty in the banking industry, which generates an inefficient performance,

then the intermediary process between those who need funds and fund owners will have some barriers. The existence of these barriers would hinder the flow of funds to finance projects for development (Andi, 2012).

Thus, deposit money banks could exercise market power by increasing prices of their products and services with the view of maximizing profit, hence attempt to create barriers or gap between surplus units and deficit units and this would either stabilize or destabilize the economy. Most finance literatures have often maintained that Deposit Money Banks are saddled with the responsibility of taking depositories of private and public funds in an economy. The services provided by these banks are compensated by way of interest charges, fees, commissions e.t.c. by bank customers/depositors. Thus a market with a single Deposit Money Bank in an economy, which economists describe as a monopoly market, its impact on the economy would be significantly different from an economy with a high concentration of banks. In Nigeria, few works have been carried out to know the competitive conducts displayed by the deposit money banks on the economy (Ajisafe and Akinlo, 2013). The few studies carried out adopted the Lerner Index of Market Power, which has been widely used in the banking sector as indicators of degrees of market power.

Some of the most notable studies in this area are Shaffer (1993) for Canadian banks, Angelini and Cetorelli (2003) for Italian banks, Maudos and Pérez (2001) for the Spanish banking sector, and Fernández, and Maudos (2004). The Lerner index defines the difference between the price (interest rate) and marginal cost expressed as a percentage of prices, taking into account the divergence between product price and marginal cost of production as the essence of monopoly power. It takes the value of 0 in the case of perfect competition and 1 under perfect monopoly. The Bresnahan – Lau model has also been adopted in the works of Folorunsho and Adetunji (2015) the study discovered that a monopolistic competition exists between Nigerian banking industry. These estimation methods of previous works have faced several criticisms, which made the findings doubtful and has created a gap which has to be filled. This study however intends to close the gap by using econometric statistical tools, to determine the relationship between Deposit Money Banks' Market Power and the Nigerian economy for the period 1981-2020.

## 2. LITERATURE REVIEW

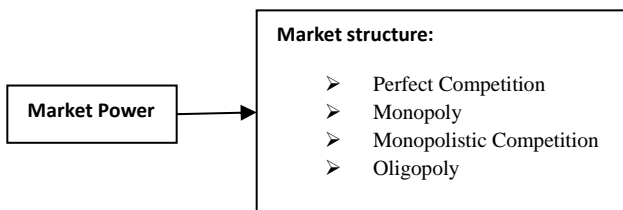
### 2.1 Conceptual Review

#### 2.1.1 Market Power

In economics, market power refers to the ability of a firm to influence the price at which it sells products or services to make economic profit (Wikipedia). This implies that Deposit Money Banks' Market Power involves influencing the price of their products and services for economic profit. Market power is a measure of the ability of a company to successfully influence the price of its products or services in the overall market place. For a company to hold extensive market power in an industry, in which it operates, the industry must not be heavily populated with competition. Market power is related to the number of companies present in the market. Fewer companies implies greater market power available to each player (corporatfinanceinstitute). Berger and Hannan (1998) found out that banks that are not exposed to competition, are able to exercise monopoly power and tend to be less efficient than banks subject to more competition. The greater the market power, the lower the effort of managers to maximize operating efficiency. Market power implies that in a situation where the quantity of credit supplied is reduced and higher rates are charged is detrimental to consumers and growth as it decreases efficiency, innovation and quality of services (Pagano 1993 and Guzman 2000). These definitions show that Deposit money banks can successfully influence lending rates, deposit rates, savings rate, interbank rates, fees, and commissions, depending on the number of banks operating in the industry and regulations from regulatory agencies. Fewer banks in the industry imply greater market power of banks and could impact on the real gross domestic product of the economy. Thus, with higher number of banks in the industry, there could be lesser market power of banks due to competition; this could impact on the real gross domestic products of the economy. Church and Ware (2000) asserts that, a firm in a perfectly competitive market has no market power, whereas a firm in an exclusive market has the strongest market power. The more competitive the market is, the lower the market power of firms is and vice versa, the more monopoly on the market, the higher the market power of firms. Fernandez de Guevara, and Maudos (2004) defined the bank's market power as an indicator of competitiveness and described the extent to which banks can set prices for products and banking services that exceed the marginal cost of the bank.

#### 2.1.2 Market Power and Market Structure

The degree or level of market power which organizations assert in different markets are relative to the market structure which the firm operates. There are four market structures known in economics, which are:



**Perfect Competitive market structure:** This is a theoretical market structure where the quantity supplied by sellers in the market equals quantity demanded at the market at current price (Debreu 1959). In this market structure, market selling price is equal to marginal cost of production. Perfect competitive market has the following features: perfect information, no barriers to entry, all firms have relatively small market share, producers sell homogenous products and services, all firms are assumed to be price takers. This market does not occur in real life (McDermott and John 2015). They further argued that market power is impossible with this kind of market structure.

**Monopoly:** This is a market condition where there is only one seller of a product or service. Monopoly power exists when there is a single seller, which might be a large firm, with the ability to dictate price of goods and services via its own production process. In most cases, there is little or no government regulation. The monopoly power has the ability to influence not only the products or services sold, but also the price of the product (McKenzie R.B., Lee .D. R.,2008). The most deliberated form of market power is that of monopoly. It is often argued that monopoly is regarded as market failure which consists of one seller without any substitute. Monopoly

exist where there is high restrictions to entry, economies of scale and legal restrictions e.t.c

**Monopolistic Competition:** This market structure exists where there are many producers or sellers that are competing against one another by selling products or services that are similar, which are differentiated but are not perfect substitutes (Krugman and Maurice 2009). They further assert that firms are able to get economic profits as a result of differentiated goods and services actually selling with some level of market power. The features of this market condition includes; many sellers and buyers, free entry and exit, differentiated products. In this kind of market, the sellers or firms are not price takers but compete on the basis of product price, marketing strategies, quality of product, branding and so on.

**Oligopoly:** This is a form of market structure which is highly concentrated while several firms control a significant share of market sales. It's a market with few sellers and many buyers, with differentiated products, with barriers to entry. In this market, only very few firms or organizations make up the market share as their market power is seen to be large but no market power independently. It is worth acknowledging that when prices are adjusted by the firms, other firms in the industry would be directly affected (Vatiero 2009).

#### 2.1.3 Factors Influencing Market power

**Number of Competitors in the Market:** For an effective market power to exist, the market must not be heavily populated with competition. Invariably, market power is inversely related to the available number of firms in the market. Thus the impact of this is that, there would be greater market power when there are fewer firms in the industry. In an economy dominated with few banks, a particular deposit money bank can exercise market power over others with little or no competition.

**Product Differentiation:** A business entity that offers differentiated products and services from other business firms can influence or dictate the price of its products or services and exert considerable market power in the market. A deposit money bank with unique and different products and services could have the ability to dictate the price of their products in the economy.

**Pricing Power:** A bank or any business organization can exert sufficient market power when it offers products and services distinct from others and by having large market share with the intent of meeting the demand of existing and potential customers. In this case, a deposit money bank with a banking product, services or technology that is distinct from others, can dictate the pricing of products or services to customers.

**Barriers to entry or exit:** in a perfectly competitive market, firms in an industry are free to enter or exit the market. However, if there is high barrier to entry, the existing players in the market would have higher market power, since new firms cannot easily enter the industry and share the existing profit. So in the banking industry, if new deposit money banks cannot easily enter the banking industry, by way of regulations and or legal restrictions, then the existing deposit money banks can dominate the market and exert market power.

**Perfect Information:** in a perfectly competitive market, it is an assumption that there must be perfect information available to all participants in the market. However, a bank cannot have market power if all players in the industry have full and complete information about the market.

#### 2.1.4 Sources of market power

Deposit Money Banks or any business organization can obtain market power from various sources. Some of these sources include:

- i. **Additional Returns to Scale:** Krugman and Wells (2009) assert that firms are more profitable when their size or scale expands. They believe that as the returns to scale increases the average total cost reduces. With additional returns to scale, the organization derives its market power from increased returns to scale.
- ii. **Loyalty of customers and value placed on reputation of brands:** existing firms or banks would have competitive advantage over potential banks that might be coming into the industry. The existing banks in the banking industry with strong brand and customer loyalty to its brand, would give the bank strong market power over others in the economy.
- iii. **Higher starting cost:** where the requirement to commence an organization, especially the start up cost is very high, it would be difficult for some banks to meet up. The banks or

organizations that can meet up would derive market power, as the smaller organizations might find it difficult to meet up with such high start up cost.

- iv. Higher Barriers to entry: barriers to entry could include technological superiority and innovations that are unique to a particular or group of banks, control of scarce resources, e.t.c and could create barriers to entry of banks that do not have technological superiority, innovations and control of resources. These barriers could make it difficult for such banks to have market power to decide prices in the economy. However, banks with high technological superiority, innovations and control of scarce resources can derive market power over others in the industry.
- v. Government regulations through Central Bank of Nigeria: the government policies and high regulations from regulatory agencies can restrict banks that cannot meet up with the regulatory requirements from operating in the industry. Regulations can now limit the number of banks to a sizeable number, thereby creating market power amid one or two banks.

**Banks Lending Rates:** Lending rate is the amount charged by banks or lenders for a certain period as a percentage of the amount lent or deposited. The total interest on the amount or the principal sum is determined by the duration (business standard). Greenwood and Jovanovic (2018) established that as bank lending rates decrease, economic growth tends to increase.

**Banks Deposit rate:** The deposit rate is the interest rate paid by commercial banks or financial institutions on cash deposits of account holders. Financial institutions like banks typically offer better rates for accounts holding larger balances. This is used as an incentive to attract high value clients with considerable assets. By attaining higher interest rate, naturally the greater the sum that is deposited, the larger the return overtime (investopedia).

**Banks Savings rate:** A savings account is an interest bearing deposit account held at a bank or other financial institutions. These accounts typically pay a modest interest rate for safety and reliability. Savings accounts have limitations on how often a customer can withdraw funds. Savings accounts pay interest but keep funds easy to access. The interest earned on a savings account is considered taxable income.

A rise in aggregate savings would yield larger investments associated with higher GDP growth. As a result, the high rates of savings increase the amount of capital and lead to higher economic growth in the country ( innovation-entrepreneurship.springeropen)

**Interbank rate:** The interbank rate is the rate of interest charged on short term loans made between banks. Banks may borrow money from other banks to ensure that they have enough liquidity for their immediate needs or lend money when they have excess cash on hand. The interbank lending system is short term, typically overnight.

### **2.1.5 Relationship amid lending rates and economic growth**

The relationship amid bank lending rate and economic growth has been widely researched by research scholars. Oritsejafor and Gruseh (2007) for instance believe that bank lending rates has effect on economic growth in Nigeria. Thus they discovered that a positive relationship exist amid lending rates and economic growth. However, Williams (2009) had a different view to the argument as he discovered that there exist inverse relationship between lending rate and economic growth in Nigeria.

### **2.1.6 Relationship amid Banks Deposit rate and economic growth**

Kendall (2000) studied the relationship between deposit rates and the economy. He discovered that a rise in real deposit interest rate leads to increase in gross domestic product. Udude (2015) also observed that positive relationship was found between interest rate on deposit and savings which leads to economic growth. This study opines that if an increase in deposit rate would propel depositors to increase deposits in the bank, this increased deposits would form a pool of funds which can be used for investments to boost economic growth.

## **2.2 Theoretical Review**

### **2.2.1 Structure Conduct Performance Theory (SCP)**

The theory of Structure Conduct Performance measures the degree of competition in an industry from its structural features

(Bain, 1951). It asserts that the concentration in the market can lead to market power, which makes banks to earn monopolistic or abnormal profits by offering lower deposit rates and charging higher loan rates.

### **2.2.2 Efficient Structure Hypothesis**

This theory as suggested by Demsetz (1973) states that the positive relationship between profitability and market concentration is not a consequence of market power but due to the greater efficiency of firms with larger market share.

### **2.2.3 Contestable Market Theory**

This theory was developed by Baumol (1982), he stated that a concentrated industry can behave competitive, when there are no (or low) barriers for new entrants into the market. These arrangements imply that a concentrated market can be competitive even if it is dominated by a few large banks. Therefore, policymakers should be relatively less concerned when the financial system is dominated by few financial intermediaries if the financial market is contestable.

## **2.3 Empirical Review**

Folorunsho and Adetunji (2015), in their study, investigated the level of market power in Nigerian deposit money market using Bresnahan-Lau's model. Annual data for the period of 1986-2012 were sourced from annual financial statements of Nigerian banks and Central Bank of Nigeria statistical bulletin. The model was estimated using Two-stage-Least Square (TSLS). The results revealed that Nigerian deposit money market maintained monopolistic competition. Anthony and Anthony (2014) examined the relationship between bank competition, financial innovations and economic growth in Ghana using quarterly data from 1990 to 2009. They employed the ARDL co integration procedures. The results showed that, in the long run, bank competition is positively related to economic growth whilst financial innovation is negatively related to economic growth. In the short run, bank competition is negatively related to economic growth. Ajisafe and Akinlo (2013) examined and tested the degree of competition in Nigerian banking sector. The results showed that the Nigerian banks demonstrated monopolistic competition after adopting Panzar and Rosse method using GMM estimator. Al-jarrah, Qasrawi, Obeidal and Sulyman (2012) evaluated the competition and pricing power in the banking sector of Jordan over the period 2001-2008. The most widely known structural and non-structural measures of competition were used and their results were reconciled with the aim of obtaining more consistent estimates for the overall state of competition of the banks under study. With regard to the traditional banking activities, the results suggest that net interest margin measures that the banking sector of Jordan is not characterized by the so called "perfect competition".

Greenberg and Simbanegavi (2009) investigated the level of competition in the South African banking sector. The study used two non-structural methods of measurement, namely the Panzar and Rosse approach and the Bresnahan model. The results of the non-structural models showed that the South African banking sector faces a high level of monopolistic competition, and some features of perfect competition. This level of competition was tested during the period 1998 to 2007 using the Panzar and Rosse approach and from 1992 to 2008 for the Bresnahan model. This result supports other non-structural studies on the South African banking sector. Erol, Masood, Aktan and Sergi (2002) carried out an empirical assessment of the market structure and the competitiveness of the Chinese banking sector particularly in the wake of China's recession to the WTO by employing the Panzar-Rosse H-Statistic, as a non-structural model over the period 2004-2007. The empirical findings indicate that the banking sector in China was monopolistically competitive for the specified period. Ayeni (2013) investigated the level of competition in the Nigerian banking sector. Data were sourced from 18 banks for the period of 2006 -2010. The study employed the non-structural method of Panzar and Rosse to compute the competitive index. The results showed that banks in Nigeria earned their income under an averagely monopolistic competitive market.

Sang N, Vinh N, Long L and Trang N (2019) investigated the impact of market power on bank financial stability using bank-level data from 24 banks in Vietnam over the 2008- 2017 period. In order to measure the degree of market power in the Vietnam banking sector, they used Lerner index by fixed effect model, random effect model, and Z score as a measure of financial stability. The findings revealed that the degree of market power in the Vietnam bank has a positive effect on stability while loan growth rate had a negative effect on

financial stability. Lubis (2012) examined the degree of market power of Indonesian commercial banking industry using Bresnahan-Lau model. The results indicate that the market power of credit market of the industry was relatively low. This means that the degree of competition was quite high. Asogwa (2002) examined the banking competition in Nigeria using firm level balance sheet and income statement data for the period 1997 to 2001. He adopted the conjectural variation approach for the analyses of competition. In this perspective, estimation of a simultaneous equation model, formed by a cost equation and a supply equation, the latter containing a behavioral parameter to identify and assess the market conduct of banks. The finding was that the estimated degree of competition was usually lying between the perfectly competitive and perfectly collusive values. Fernandez de Guevara and Maudos (2004), using the Lerner Index and the Panzar-Rosse H-Statistic, found that a more concentrated banking system does not induce economic growth because the system constrains credit availability. Leon (2015), using the Boone Indicator, Lerner Index and the H-statistic, found that bank competition facilitates access to credit in developing countries. De Nicolo (2000) and De Nicolo, Bartholomew, Zaman and Zephirin (2004) reported that profitable and large banks with considerable market power in industrialized countries have lower charter value and increased insolvency risk.

Other studies have produced results that favour a strong growth-effect of bank market power. Berger, Demircuc-Kunt, Levine, and Haubrich. (2004) employed data from both developed and developing countries and found that more significant market shares and efficiency ranks of small, private, domestically owned banks are associated with more excellent economic performance and that the marginal benefits of higher shares are enormous when these banks are more efficient. It follows that a less competitive banking system induces efficiency in financial intermediation, which can be more encouraging on economic development, should the necessary regulatory mechanisms be put in place.

### 3. METHODOLOGY

This section contains the research methods used for the study. It revealed how the data was collected, designed, model specified and preliminary tests conducted.

#### 3.1 Data Collection

The data for this study was collected from the website of the Central Bank of Nigeria (CBN) statistical bulletin for the period 1981 to 2020.

#### 3.2 Research Design

The design of this study is quantitative as it analyzed data on the relationship between Deposit Money Bank's Market Power and economic growth in Nigeria. The study used four proxies for Market Power of Deposit Money Banks; Lending rate (LR), Deposit rate (DR), Savings rate (SR) and Interbank rate (INTBR) while Real Gross Domestic Products growth rate (RGDP) as proxy for economic growth in Nigeria.

#### 3.3 Data Analysis Technique

There are different statistical tools of analysis in statistics, in which econometrics tool of analysis deals with the measurements of economic relationships. Frisch and Bjerkholt (1995) asserts that econometrics aims to give empirical content to economic relations for testing economic theories, forecasting, decision making and for policy evaluation. Econometrics can also be defined as deriving economic relations, by applying mathematical and statistical methods to data, thus it aids in both analyzing the impact of an existing phenomenon and testing a given hypothesis (gementstudyguide.com).

The data type of this study which is a time series data will be analyzed using the econometric statistical tool. The e-views 10 version will be used as the software to run the regression analysis.

#### 3.4 Model Specification

Model specification is a mathematical expression used to measure the economic relationship between variables (dependent and independent variables). In this case we specify a functional and econometric models for the dependent and independent variables of the study.

$$RGDP = f(LR, DR, SR, INTBR) \dots \dots \dots (1)$$

Assuming a linear relationship amongst the variables, the econometric relationship of the functional form is written as follows;

$$RDGP = \beta_0 + \beta_1 LR + \beta_2 DR + \beta_3 SR + \beta_4 INTBR + U \dots \dots \dots (2)$$

Where:

RGDP= Real Gross Domestic Products growth rate

LR= Lending rates

DR= Deposit rates

SR= Savings rates

INTBR= Interbank rates

U= stochastic error term

Bo, = constant

b1, b2, b3, b4, = coefficients and parameters to be estimated

### 3.5 Pre-Test

The following pre-test was conducted to ascertain the validity and global acceptability of the variables used as candidates for the selected model.

#### 3.5.1 Test for stationarity (Unit Root test)

The test for stationarity of the data is one of the assumptions of an econometric model. It would reveal whether the data is stationary at level, first difference or whether it's a mixed order of integration. This result will give direction of the statistical tool to be used to estimate the equation. The short-run tests, long-run test, autocorrelation test and the granger causality tests would be conducted. These tests would reveal whether there exists a long run relationship between two or more co-integrating variables in the estimated equation.

## 4. ANALYSIS AND RESULTS

The data collected on Real Gross Domestic Products rates, Lending rates, Deposit rates, Savings rates, and Interbank rates from the various sources, are analyzed and interpreted in this section.

### 4.1 Test For Stationarity (Unit Root Test)

The Augmented Dickey-Fuller test statistic was used to test for the unit root of the data. The following results were obtained from e-views 10 version.

**Table 1.** Showing Mixed Order of Stationarity-Unit Root Test

Variables	ADF test statistic at	Critical values	Order of integration
	LEVEL	1 <sup>ST</sup>	
		DIFF	
RGDP rate	-3.697490	-3.610453 -2.938987 -2.607932	1 (0)
LR		-6.885862 -3.621023 -2.943427 -2.610263	1 (1)
DR		-6.729670 -3.615588 -2.941145 -2.609066	1 (1)
SR		-6.362444 -3.615588 -2.941145 -2.609066	1(1)
INTBR	-3.104468(pro.0.034)	-3.610453 -2.938987 -2.607932	1(0)

Significance at 10%, Significance at 5%, Significance at 1%.  
Source: Computation from eviews 10

The test result above shows the order of stationarity (unit root) of the dependent and independent variables. While RGDP rate and INTBR are stationary at level 1(0), LR, DR, and SR are stationary at first difference 1(1). This implies that the regression equation would be estimated and tested using Auto Regressive Distributed Lag (ARDL), because of the mixed order of integration.

### 4.2 Interpretation of Results (Auto Regressive Distributed Lag (ARDL) Test Result)

The table below shows the test result obtained from the e-views 10 software indicating the short run relationship between the dependent variable and the independent variables.

**Table 2.** Showing ARDL result

Dependent Variable: RGDP  
Method: ARDL  
Date: 04/22/21 Time: 07:31  
Sample (adjusted): 1985 2020  
Included observations: 36 after adjustments  
Maximum dependent lags: 4 (Automatic selection)  
Model selection method: Akaike info criterion (AIC)  
Dynamic regressors (4 lags, automatic): LR DR SR INTB  
Fixed regressors: C  
Number of models evaluated: 2500

Selected Model: ARDL(1, 4, 1, 4, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
RGDP(-1)	-0.075491	0.211871	-0.356307	0.7260
LR	0.118721	0.224173	0.529593	0.6032
LR(-1)	-0.108030	0.226732	-0.476465	0.6398
LR(-2)	-0.286774	0.198552	-1.444329	0.1668
LR(-3)	-0.204985	0.198339	-1.033507	0.3158
LR(-4)	-0.517014	0.227567	-2.271922	0.0364
DR	0.349764	0.341990	1.022731	0.3208
DR(-1)	0.762395	0.334999	2.275811	0.0361
SR	-0.728992	0.557608	-1.307356	0.2085
SR(-1)	0.046133	0.509475	0.090550	0.9289
SR(-2)	0.310367	0.451953	0.686725	0.5015
SR(-3)	-0.492817	0.509966	-0.966372	0.3474
SR(-4)	-0.499920	0.448001	-1.115890	0.2800
INTB	0.064037	0.075982	0.842790	0.4110
INTB(-1)	0.027151	0.085117	0.318983	0.7536
INTB(-2)	-0.024153	0.089953	-0.268509	0.7915
INTB(-3)	0.250058	0.090463	2.764189	0.0133
INTB(-4)	0.136461	0.086168	1.583657	0.1317
C	17.37858	4.944812	3.514508	0.0027
R-squared	0.726842	Mean dependent var		4.623611
Adjusted R-squared	0.437617	S.D. dependent var		4.029289
S.E. of regression	3.021653	Akaike info criterion		5.354735
Sum squared resid	155.2166	Schwarz criterion		6.190481
Log likelihood	-77.38523	Hannan-Quinn criter.		5.646433
F-statistic	2.513064	Durbin-Watson stat		1.599335
Prob(F-statistic)	0.031767			

\*Note: p-values and any subsequent tests do not account for model (source: e-views 10 ARDL result)

**4.2.1 Interpretation of Results**

Table two, shows R-sqaure at 72.68% while the adjusted R-sqaured shows a percentage of 43.76%, the probability value is 0.031767. This implies that the predictor or independent variables selected are good variables that can predict the movement of the dependent variable by only 72.68% and the probability value of 0.031767 indicating that the explanatory variables are best fits to predict the direction of the dependent variable. Thus LR, DR, SR, and INTBR can influence the direction of Real Gross Domestic Products in Nigeria. The null hypothesis is rejected at 5% significant level. At lags 1, 2, 3 and 4, the result shows that the lending rate has a negative relationship with real Gross Domestic Products with -0.108030%, -0.286774%, -0.204985% and -0.517014%, respectively. Thus a 1% increase in lending rate will lead to -0.108030, -0.286774, -0.204985 and -0.517014 decrease in real gross domestic products. The probability values of 0.6398%, 0.1668% and 0.3158% which are greater than the critical value of 5%, shows that lending rates in Nigeria does not significantly predict the movement of Real Gross Domestic Products. Thus the null hypothesis is accepted. This further suggest that at short run period, an increase or decrease in lending rate by Deposit Money Banks in Nigeria do not predict the movement of real Gross Domestic Products. The null hypothesis is accepted at 5% significant level. At lag 1, the result shows that deposit rate has a positive relationship with real gross domestic product at 0.762395% thus a 1% increase in deposit rates leads to 0.762395% increase in Real Gross Domestic Product. The probability values of 0.0361% at lag 1 is lower than the critical value of 5%. This shows that deposit rates charged by DMB in Nigeria significantly predict the movement of Real Gross Domestic Products. Thus, the null hypothesis is rejected.

Savings rate at lags 1 and 2, shows that Savings rate has a positive relationship with real Gross Domestic Product with 0.046133% and 0.310367% respectively, thus a 1% increase in savings rate leads to 0.046133% and 0.310367% increase in Real Gross Domestic Products. Their probability values of 0.9289% and 0.5015% at lags 1 and 2 shows that significant relationship does not exist between LR and RGDP. Thus the null hypothesis is accepted. At lags 3 and 4 however, a negative relationship was found between SR and

RGDP with -0.492817% and -0.499920% respectively. Thus a 1% increase in SR leads to decrease in RGDP by -0.492817% and -0.499920%. Their probability values of 0.3474% and 0.2800% also shows that SR does not significantly predict the direction of RGDP at those lag periods. Therefore the null hypothesis is accepted.

Inter-bank rates at lags 1, 3 and 4, shows positive signs with the following values 0.027151%, 0.250058 and 0.136461% respectively. Thus a 1% increase in inter-bank rates leads to 0.027151%, 0.250058 and 0.136461% increase in Real Gross Domestic Products, respectively. The probability values of 0.7536% and 0.1317% which is greater than the critical value of 5% is an indication that inter-bank rates in Nigeria do not significantly predict the direction of Real Gross Domestic Products at those lag periods. Thus the null hypothesis is accepted. However at lag 3, the probability value of 0.0133 shows that inter-bank rate significantly predict RGDP at that lag period. At lag 2, a negative relationship was observed, with -0.024153%, and a 0.7915% probability value, which is higher than the critical value of 5%. Thus there is no significant relationship at lag 2, thus the null hypothesis is accepted.

**Table 3. Long Run Bounds Test**

F-Bounds Test		Null Hypothesis: No levels relationship			
Test Statistic	Value	Signif.	I(0)	I(1)	
			Asymptotic: n=1000		
F-statistic	5.586244	10%	2.2	3.09	
k	4	5%	2.56	3.49	
		2.5%	2.88	3.87	
		1%	3.29	4.37	
Actual Sample Size	36		Finite Sample: n=40		
		10%	2.427	3.395	
		5%	2.893	4	
		1%	3.967	5.455	
			Finite Sample: n=35		
		10%	2.46	3.46	
		5%	2.947	4.088	
		1%	4.093	5.532	

The bounds test result as shown in table 3 revealed an F-statistic value of 5.586244% which is greater than the upper bound of 3.49% at 5% level of significance. The null hypothesis is rejected at 5% level, and we conclude that there is a long run relationship between all the independent variables viz lending rate, deposit rate, savings rate, and interbank rate and real gross domestic products in Nigeria for the period studied. The difference between the f-statistic value and the significant level is however minimal.

**4.2.2 Autocorrellation-Durbin Watson**

The result of the Durbin Watson shows a 1.599335%, this means that there is no presence of autocorrelation in the data. Thus, meeting the global criteria for the test of the presence of autocorrelation as one of the regression assumptions.

**Table 4. Granger Causality Test Result**

Pairwise Granger Causality Tests  
Date: 04/22/21 Time: 07:50  
Sample: 1981 2020  
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
LR does not Granger Cause RGDP	38	0.95778	0.3942
RGDP does not Granger Cause LR		1.77488	0.1853
DR does not Granger Cause RGDP	38	0.46906	0.6297
RGDP does not Granger Cause DR		0.27512	0.7612
SR does not Granger Cause RGDP	38	0.23381	0.7928

RGDP does not Granger Cause SR		2.00401	0.1509
INTB does not Granger Cause RGDP	38	0.22073	0.8031
RGDP does not Granger Cause INTB		0.22901	0.7966
DR does not Granger Cause LR	38	0.30498	0.7392
LR does not Granger Cause DR		2.04481	0.1455
SR does not Granger Cause LR	38	0.04570	0.9554
LR does not Granger Cause SR		2.53345	0.0947
INTB does not Granger Cause LR	38	2.04650	0.1453
LR does not Granger Cause INTB		0.47877	0.6238
SR does not Granger Cause DR	38	3.22027	0.0528
DR does not Granger Cause SR		2.07651	0.1414
INTB does not Granger Cause DR	38	5.39657	0.0094
DR does not Granger Cause INTB		2.03658	0.1466
INTB does not Granger Cause SR	38	3.11766	0.0575
SR does not Granger Cause INTB		1.86492	0.1709

The results above shows that LR does not granger cause RGDP at probability level of 0.3942 neither does RGDP granger causes LR at a probability level of 0.1853, which is higher than 5% level of significance. DR also does not granger cause RGDP with 0.6297 while RGDP does not granger cause DR at 0.7612. Also SR and RGDP have a bi directional relationship but does not granger cause each other with 0.7928 and 0.1509 respectively. The INTB and RGDP has same relationship, they do not granger cause each other at 0.8031 and 0.7966. The probability values are all greater than 5% critical level. However, a unidirectional causality was observed between INTB and DR with a probability value of 0.0094 which is lower than the 5% critical level. The granger causality result has shown clearly that all the explanatory variables, LR, DR, SR and INBR do not granger cause RGDP and vice versa. Since causality does not run between the variables, it shows that DMBs in Nigeria do not exert market power in the Nigerian economy for the period reviewed.

## 5. DISCUSSION OF FINDINGS

The findings above have shown that at short run period, Lending rates, Savings rates and Interbank rates had negative and positive relationships at some lag periods with Real Gross Domestic Products. It was further observed that Lending rates, Savings rate and Interbank rates do not significantly predict the movement of Real Gross Domestic Products in Nigeria for the period reviewed, except deposit rate which has a positive relationship and significantly predict the direction of RGDP but only at lag one. This implies that no single or few Deposit Money Banks monopolizes the pricing of banking products and services in Nigeria. It also shows that in a perfect competitive market, high concentration and regulation of Deposit Money Banks exist in Nigeria. Thus a market power is very minimal or does not exist in the Nigerian banking system. This result agrees with the assertion of Church and Ware (2000), where they stated that, a firm in a perfectly competitive market has no market power, whereas a firm in an exclusive market has the strong market power. The more competitive the market is, the lower the market power of firms are and vice versa. Also in Fernandez de Guevara and Maudos (2011), using the Lerner Index and the Panzar-Rosse H-Statistic, it was discovered that a more concentrated banking system does not induce economic growth because the system constrains credit availability.

This result also aligns with the Structure Conduct Performance theory which asserts that the concentration in the market can lead to market power, which makes banks to earn monopolistic or abnormal profits by offering lower deposit rates and charging higher loan rates. Demsetz (1973) however suggested another concept known as Efficient Structure Hypothesis (ESH) it states that the positive relationship between profitability and market concentration is not a consequence of market power but due to greater efficiency of firms with larger market share. The long run result also showed an

insignificant relationship between LR, DR, SR and INTB and RGDP in Nigeria. The granger causality was not found between the dependent and independent variables, which confirms the short run position attesting no significant relationship between the dependent variables and explanatory variables. So far, the study has revealed that there is no single or few Deposit Money Banks in Nigeria that have market power over pricing of their products and services for the period 1981-2020. Thus, the results have shown that the DMBs do not have market power on the economy. This also aligns with Fernandez de Guevara and Maudos (2011), who used the Lerner Index and the Panzar-Rosse H-Statistic, and maintained that a more concentrated banking system does not induce economic growth through their intermediary roles as custodians of deposit takings, banker to both private and public sectors, channeling of credits from surplus units to deficit sectors of the economy, ability to increase or decrease prices of their products and services for profitability and financial stability in the economy. From the outcome of the study, deposit money banks in Nigeria are operating a perfectly competitive market. The result aligns with the study of Church and Ware (2000) who determined that, a firm in a perfectly competitive market has no market power, whereas a firm in an exclusive market has the strongest market power.

## 6. SUMMARY, CONCLUSION AND RECOMMENDATIONS

### 6.1 Summary/Conclusion

We have critically examined the relationship between Market Power of Deposit Money Banks and the Nigerian economy. The lending rates, deposit rates, savings rate and interbank rates were variables used for market power of deposit money banks while Real Gross Domestic Product growth rates was proxy for economic growth for the period 1981-2020. The study observed that at short run period, Lending rates, Savings rate and Interbank rates do not significantly predict the movement of Real Gross Domestic Products in Nigeria for the period reviewed, except deposit rate which has a positive relationship and significantly predict the direction of RGDP but only at lag one.

Causality does not run amid the independent variables and dependent variable. It was further revealed that long run relationship exists between the variables but the margin is minimal. An insignificant relationship means that there is no market power displayed by Deposit Money Banks in the industry, while a significant relationship means one or two banks in the industry have a high market power. The outcome of this study has shown that Deposit Money Banks in Nigeria do not demonstrate market power by increasing or decreasing the prices of their products and services arbitrarily to create financial instability in the economy. Banks like Zenith Bank, Guaranty Trust Bank First Bank plc, Ecobank Nigeria Access Bank plc, United Bank for Africa e.t.c. do not have market power in the banking industry in Nigeria for the period observed. Thus, none of these banks monopolizes the industry with increases in the rates charged on their products and services. The market is highly regulated, concentrated and competitive on none price related strategies. We recommend that: (a) the Central Bank of Nigeria and other monetary authorities ensure strict regulation of lending, savings, deposit, and interbank rates to ensure financial stability of the financial system and the economy at large; (b) the pricing of banks products and services should be competitive and market based and (c) the banking supervision, control and monitoring unit of the CBN should be pro active and ensure close monitoring of prices of new products, and innovations of DMBs.

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