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## Effect of Interest Rate Deregulation on Commercial Banks Lending Operations in Nigeria (1970-2020)

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### Abstract

*This study examines the effect of interest rate deregulation on commercial banks' lending operations in Nigeria from 1970 to 2020. The study used annual data from CBN and applied Johansen co-integration, error correction model, and chow test. The result for the Johansen co-integration test shows that there is a long-run relationship between interest rate and commercial bank loans and advances in Nigeria during the period of analysis, while the chow test analysis shows that the null hypothesis is rejected, and this suggests that interest rate has no significant effect on commercial banks' loans and advances in Nigeria during regulated and deregulated periods. The study recommends that commercial banks should be given low-interest loans by the Central Bank of Nigeria (CBN) through the use of essential monetary policy tools, including the monetary policy rate (MPR) and therefore Commercial banks in Nigeria will have to pay low interest rates on loans as a result of this.*

**Keywords:** Interest Rate, Monetary Policy Rate, Deregulation, Exchange Rate

**JEL Classification:** E43, G21

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### 1. Introduction

Monetary policymakers have a great deal of interest in the actions of commercial banks since they play a critical role in any country's economic development. They serve as fundraisers, collecting money from economic units that have more than they need and distributing it to others who need it. To put it simply, they serve as a kind of financial middleman. In light of their importance, it's understandable that some people refer to them as economic lubricants. Governments throughout the globe prefer to concentrate on how commercial banks operate when developing a sound banking system (Olusina, 2020). According to Daniel (2019), to develop a healthy and stable economy, commercial banks are essential because commercial banks play such a critical role in the transaction loan and advances etc. Therefore, for financial mediation to work, it's important to keep the public's trust and stop large-scale systemic risk and failure. Adeniyi (2020) concludes that, almost every nation on the planet has some kind of regulation or oversight in place for commercial banks, either directly or indirectly. As a result, the great majority of economic transactions are not constantly in equilibrium. The institutions' capacity to keep things steady may be harmed if market participants take unwarranted risks. These regulatory obligations, however, vary greatly from nation to nation and administration to administration. They work together to keep an eye on Nigerian banks that are covered by the National Deposit Insurance Corporation (NDIC). In the study of Friday (2020), it is the CBN's job to oversee the regulatory and supervisory framework, and the NDIC's job to monitor the insured banks within that

framework. When the Central Bank of Nigeria (CBN) was established in 1959, a law stated that every regulated bank must provide the CBN with a monthly account of their assets and liabilities. These figures are then made available to the general public on a monthly basis so that they may see how well the regulations are being followed and how the policy has influenced the economy as a whole. Many restrictions were put in place by the Central Bank of Nigeria (CBN) throughout the years 1959 to 1985. There was a great deal of rigidity in the Nigerian interest rate and currency markets during this period (Aina, 2020). The private sector was also often helped by banks with loans when needed. As stated in 1995 by Anyanwu and Oaikhenan, interest rates controlled by the government were typically not excessively high. It was 5.78 percent on Treasury bills and deposits in 1970, 4.94 percent on Treasury loans in 1970, and 5.58 percent on Treasury loans in 1985. Amassoma and Nwosa (2011) noted that because of this, the total credit to the domestic economy rose steadily from N1.14 billion in 1970 to N10.78 billion in 1980 to N32.68 billion in 1985. More than N1.14 billion has been raised since the initial announcement. Despite the abundance of oil on the market, the economy remained mired in stagnation until 1986. Nigeria's economy suffered greatly in the late 1970s and early 1980s as oil prices collapsed throughout the globe. The federal government began the Structural Adjustment Program (SAP) in 1986 with the aid of the World Bank and the International Monetary Fund (IMF). When the Second Foreign Exchange Market (SFEM) was established in 1986, the financial authorities started to relax their grip on the market. Afterwards, in 1988, the currency rates were no longer subject to government regulation (Soluola, 2019).

The Open Market Operation (OMO), the cash reserve ratio, and a few additional policy measures were introduced shortly afterwards. They were all done at the same time. Banks had to keep 20% of their demand deposits and call money as cash reserves in 1987, but that was reduced to 10% in 1988, and then restored to 10% in 1990 and 1995. Government control over interest rates ended on that day in 1987. This was done to alleviate the country's financial intermediation constraints. It was not until October 1996 that interest rates were totally free of government supervision after being deregulated for the first time on August 1, 1987 (Jones, 2020). Rolley (2020) assert that in 2002, the highest interest rates on Treasury bills, MPRs, and loans were 18.9 percent, 19.0 percent, and 24.99 percent, respectively. A low deposit rate has prevailed during this time period, with a peak of 4.1% in 2007 and a low of 1.7% in 2012, followed by 1.3% in 2016 and 1.8% in 2020. American Broadcasting Company (2012). After the government no longer had control over interest rates, there was a huge chasm between what was intended by monetary policy and what was really accomplished. Between 1986 and 1994, neither the narrow money supply (also known as M1) nor the net credit to the government met their objectives. -2.9 percent and -3.8 percent were the actual growth rates for these variables in 1986, compared to the expected rates of 7.8 percent and 5.9 percent, respectively (Yahaya, 2020).

In the study of Bolu (2020), after 1986, the actual outcomes and the government's net credit exceeded the target of a set amount of money. A whopping 49.7% and 209.5% instead of the expected 10.9% and 13% made up the 1990 figures. CBN reports (2012) that the difference was much bigger in 1993, with a difference of 56.32 and 103.23 percent instead of the expected 20% and 14%. Since the process of deregulation of interest rates resulted in major variations in monetary policy's aims, it seems logical that commercial banks' lending practices might be affected. The impact on economic growth of interest rates, or both, is the focus of most studies on banking regulation and

deregulation Oshikoya, (1992); Odhiambo, 2010). Nwakama and Mbatogu (2004), Owolabi (2014), and Massoma (2011) all mention this. Research in the literature is scarce on the impact of policy changes on the relationship between interest rates and commercial bank loans. It's our objective to see how interest rates affect commercial bank loans and advances, both when they are regulated and deregulated. Testing for statistically significant differences in levels of effect over time may be done using the chow test. One might think of the interest rate as the cost of borrowing money, lenders charge an opportunity cost when you borrow money to invest. Alternatively, it is possible to conceive of it as the money provided to the source of the money in return for the money that will never be utilized again. When the interest rate is expressed as a percentage, this is what most people are used to seeing (Adesanmi, 2018). Why is it so difficult to forecast interest rates? Everything from taxes to interest rates to market inefficiencies all have a part in determining how much money people are willing to put into a given project.

This study merits earlier study since there is a dearth of literature on the subject matter. Although there is a ton of study in this field, many of the studies have not actually addressed the problems of interest rate and commercial bank lending operations in Nigeria over the last fifty (50) years using chow test analysis. The Johansen co-integration analysis, the error correlation model and regression analysis will be used in this research paper instead of the more common multiple regression, and correlation coefficient that have been used in the previous literature. Therefore, the objectives of this paper is to examine effect of interest rate on commercial banks' loans and advances in the regulated and deregulated exchange rate periods and whether there is a long-run relationship between interest rate and commercial bank loan and advances in Nigeria. The data will be analyzed for the period between 1970 and 2020.

## **2. Literature Review**

The most reliable approach to estimating the value of money over time, assuming that prices remain stable, is to use the real interest rate (money). To maintain the same real interest rate, nominal interest rates must be adjusted to reflect any changes in inflation expectations, as seen by the preceding link (Cottrell, 2005). If creditors are clever, inflation and nominal interest rates have an impact on each other. As a result, knowing how inflation impacts other items requires knowledge of real interest rates. Similarly, the real interest rate is utilized in general economic research for the same reasons. Inflation expectations are only notions that have never been tested in the real world. Exposure analysis may be improved by using the real future inflation rate as opposed to the assumed reasonable expectations inflation rate (Bencik, 2009). The adaptive expectations assumption is better in theory than it is in reality. To put it another way, this substitutes the projected inflation for the current inflation in the market. Over time, economic players get a greater understanding of the true value of money as inflation grows. To put it another way, they're willing to put up with higher nominal interest rates. To put it another way, real interest rates are seen as the primary relationship between interest rates and the underlying real economy (Bencik, 2009). Rather than retaining money for a certain period of time, Keynes argued that interest rates should reward investors for letting go of money rather than keeping it. To understand interest rates, Keynes looks at them through the prism of the interest rate on loans. An alternative way of looking at the interest rate is as the stock yield, return on investment, or opportunity cost of delaying spending now till later (2002). Discount, loan, and savings rates are all types of interest rates. It's the price at which supply and demand for

"credit," or savings, are balanced by "credit," or investment, plus net "hoarding" over time, according to Jhingan (2003). Interest rates, which determine the price of credit, fluctuate in response to supply and demand; in this instance, the number of individuals looking to borrow money determines the cost of credit. Using credit comes with a cost, and lenders and borrowers are both required to pay interest as part of that cost. Rates of interest and other ways to limit credit are the same in that they divide a limited amount between different needs.

According to Bamidele (2019), an increase in the gross domestic product (GDP) serves as an indicator of how productive the economy as a whole has become (GDP). To measure a country's productivity, we look at how effectively it is able to produce its own things and provide its own services. However, Harrison (2020) concludes that economic growth refers to an increase in the production of products and services. In order to get the most accurate estimate, inflation must be taken into consideration. Businesses have more money in the bank as the economy improves. Stock prices rose as a result. Job creation and capital investment are possible outcomes. More people working means more money. Customers may be able to locate better offers now that they have more money to spend. In order for the economy to flourish, individuals need to spend money. In order to avoid this, every country aspires to see consistent growth in its economy. Because of this, growth is the most significant economic measure. Consider the fact that while referring to economic growth, one must keep in mind that it refers to GDP growth over time (Petary, 2019). Newman (2020) believes that, the growth rate, which indicates average GDP, does not take into consideration how GDP fluctuates around this average level. Economic development may move more quickly when resources like labor, physical capital, energy, and other raw materials are put to greater use. On the other hand, GDP growth that is solely due to an increase in the quantity of inputs that may be used is known as extensive growth (such as a rise in the population or the addition of additional territory). It is possible to quantify economic growth in two ways: real and nominal. However, Kemmen (2020) concludes that economic growth is shown by increases in productivity that are occurring at a quicker rate than before. It is possible to increase the country's real economic growth by increasing its natural resources, human resources, or any other component that allows it to produce more products and services each year. Increases in pricing and salaries are necessary for sustainable economic development. Despite this, nominal economic growth occurs when a country's GDP rises.

Loanable funds theory, the idea of allowing individuals to borrow money was first conceived by Froyen (1996). The study believed that the interest rate was determined by the equilibrium between the supply and demand for securities. Production and thrift, as defined by classical economics, determine interest rates. "Production and thrift" The savings and investments are genuine. The idea of allowing individuals to borrow money was first conceived by Froyan (1996). According to the loanable funds hypothesis, interest rates are influenced by the quantity of money that may be borrowed. Another way to put it is to say that your ability to borrow determines the rate of interest you pay. An individual's ability to get more funds is determined by many variables, including how much money they have saved, how eager they are to obtain more cash, and how likely they are to obtain further funds. He was reported as noting that this theory integrates information from production theory, financial intermediation theory, and portfolio theory to describe how banks operate in the best and most dynamic manner. A consensus has been reached between Fixeler and Zieschang on this point (1998).

Because of the unified model, it is easy to identify how the risk of a bank's asset portfolio is linked to the number of services it provides. Due to portfolio risk, banks' interest rates and borrowing capacity are both influenced. There is a direct correlation between this and how much future revenues from bank services are discounted. When it comes to output, risk is merely a factor in how much information the service needs to handle on an individual basis. The models also illustrate that bankable money is essentially an intermediary input that banks handle, and that their only true value derives from the services they provide to make money simpler to get. The model depicts how money may be separated from value-adding procedures in the larger optimization challenge faced by a bank. The loanable funds theory of interest is based on the assumption that the nominal interest rate is controlled by the connection between the supply and demand of loanable funds. Interest rates would rise if the quantity of loanable funds remained static, but they would fall if demand increased and the supply remained static. In addition, if the quantity of loanable money increases, the interest rate will decrease. To put it in another way, if the supply and demand for loanable funds fluctuates, the interest rate will be heavily influenced by both the intensity and direction of those fluctuations. Consequently, the interest rate might shift depending on the amount and frequency with which the supply and demand for loanable funds change.

Expectations theory, Moore was a forerunner in establishing this concept (1988). The core notion of the theory, which is based on another theory, is that buyers construct expectations based on all available market information. The present spot rate, according to this theory, is the best predictor of future interest rates, and changes in the relative significance of key economic indicators or unexpected information are the most probable causes of interest rate variations. The loanable funds theory and the rational expectation theory may be merged in order to more precisely represent current economic understanding. The rational expectation theory isn't perfect because it's hard to get information and understand how people use that information to form expectations.

The liquid preference hypothesis was initially proposed by Keynes (1936). Interest rates are determined by the amount of money in circulation and the demand for it. According to the notion, it's not simply transactions that people seek money for. As a safety blanket and as a vehicle for speculation, they seek it out. With interest rates, speculative demand decreases as a person's income increases since it would otherwise lose interest. In addition, he added that investors would never be more interested in long-term investments than they are right now. A greater interest rate on long-term securities is needed to encourage investors to keep their money. As a result, the yield curve will always be downward sloping. Investing in long-term assets like bonds, equities, and real estate which tends to command a higher price even if other factors remain constant. Using their money is also a priority for them. According to Keynes' general theory of unemployment, interest rates, and currency, the cost of lending money is the interest rate. This term was employed by Keynes in the research hypothesis. According to Keynes, interest rates are mostly determined by the supply and demand for money. According to this paradigm, it's a given that there will be money. This implies that the interest rate is mostly determined by the quantity of money requested. According to studies by Keynes, there are three reasons why individuals save money: to make purchases, to be secure, and to wager on the future. When discussing the transaction and the speculative objectives, it's difficult to overestimate their significance.

According to research done by Drees and Parabasioglu in 1998 on how interest rate deregulation affected the economies of Norway, Finland, and Sweden, the interest rates in these countries went up after deregulation, which led to more economic growth. Adofu, Abula, and Audu (2010) used the ordinary least squares approach to examine changes in agricultural productivity after the deregulation of interest rates in 1986. During the time they looked at, the deregulation of interest rates had a big and positive effect on Nigeria's agricultural production. Interest rates were also shown to have a major impact on stimulating the economy in real-world research. Interest rates should be adjusted appropriately to avoid harming both savers and local investors as a result of this. Several studies have examined the profitability of Nigerian commercial banks. Okoye and Eze did a study in 2013 that said the bank lending rate affected the overall performance of Nigerian deposit money banks from 2000 to 2010. As a result of this study, Nigerian deposit money banks' financial performance was examined. It also looked at how the lending and interest rates of the central bank affected the way Nigerian deposit money banks worked. They discovered that lending rates and monetary policy rates have a significant impact on the performance of Nigerian deposit money institutions.

A decade-long investigation by Akabom-Ita (2012) examined the impact of interest rates on the net assets of multinational corporations operating in Nigeria. According to regression research, when interest rates rise, net assets fall. In 1992, the researcher used econometric methods to study how the deregulation of interest rates affected Kenya's economic growth. It is discovered that between 1970 and 1989, the real interest rate had a huge effect on how the economy grew. A smaller subset of the population was drawn from the years 1980–1989 and 1970–1979 (during the era before federal regulations took effect) (the deregulation era). Research on the impact of interest rate deregulation on the country's economic development could not come to a clear conclusion since the real interest rate had a significant negative coefficient from 1970 to 1979 but a large positive coefficient from 1980 to 1989. Eregha (2010) looked at a number of things that affect Nigeria's investment and interest rates. An instrumental variable estimation approach and a dynamic model with two equations were employed in the research. According to the World Development Indicator, the study's figures were derived. According to the research, changing interest rates have a significant and detrimental impact on investment choices in the economy. Research shows that interest rates are negatively affected by the demand for credit in both the short and long term. Study findings reveal that, despite the indirect relationship between interest rate changes and investment in a roundabout fashion, other factors have an impact on gross domestic investment. Concerns include the level of debt; economic stability; currency fluctuations; shortages; and a lack of necessary infrastructure. The author says that these important macroeconomic parameters must be improved in order for Nigeria to be a better place to invest. Olusanya (2012) examines the determinants of commercial bank lending behavior in Nigeria: a co-integration analysis between 1975 and 2010. However, the study makes use of secondary data and a series of econometrics techniques were adopted to justify the long-run relationship between commercial banks and their lending behaviour over the period of analysis. Moreover, the study investigates the level of commercial bank loan advances in Nigeria and also examines the various determinants of commercial bank lending behavior in Nigeria. The model used is estimated using Nigerian commercial bank loans and advances (LOA) and other determinants such as volume of deposits (Vd), annual average exchange rate of the naira to dollar (Fx) for the period of thirty-seven (37) years, investment portfolio (Ip),

interest rate (lending rate) ( $I_r$ ), gross domestic product at current market price ( $Gdp$ ), and cash reserve requirement ratio ( $R_r$ ). Furthermore, the model results show a positive relationship between loans and advances and deposit volume, the annual average naira-to-dollar exchange rate, gross domestic product at current market prices, and cash reserve requirement ratio, with the exception of investment portfolio and interest rate (lending rate), which have a negative relationship. It was also revealed from the result that there is a long-run relationship between loans and advances and all the explanatory variables in the model, and this shows that commercial banks have a lot of impact on their lending behaviour.

Many macroeconomic variables may impact the profitability of local and foreign commercial banks in Malaysia, as Amer Azlan and his colleagues found in their 2012 research, "Determinants of Commercial Banks' Return on Asset: Panel Evidence from Malaysia." A "panel data regression" is used to examine data from 2004 to 2011 from the 16 commercial banks that are out of balance. According to these results, all external factors, like GDP, interest rates, and inflation, have a positive effect on the return on assets of all commercial banks. Interest rates don't seem to have an impact on bank earnings in their home nation, but they appear to have a positive impact on the profitability of banks in other countries. According to Ahmad (2003), many Nigerian banks' profits derive from interest on loans. This is based on data that can be easily accessed. Changing interest rates might affect how much money banks earn overall, Ahmad added. According to Ogunlewe (2001), monetary policy and bank earnings were linked using data from Nigerian banks. The research showed that a bank's ability to make money was affected by many things, such as the exchange rate, stability securities, and the maximum amount of credit that can be given to a customer at one time, the reserve ratio, and the amount of credit that can be given to a customer at one time. Deposits, interest rates on Treasury bills, and interest rates on loans all influenced the amount of money banks earned, according to the study's findings. In 1995, Uchendu looked at the effects of different monetary policies on the commercial banks in Nigeria. When return on capital is employed as a metric for profitability, he comes to the conclusion that the most important factors affecting bank profitability are interest rates, currency rates, bank reserves, bank structure, and per-unit labor expenditures. According to the study, commercial banking in Nigeria cannot function well without consistent and accepted monetary and banking policies. Sugian (2011) studied how macroeconomic and bank-specific variables influenced Korean banking performance before and during the Asian financial crisis, by paying close attention to before and after the catastrophe, on 251 bank accounts from 11 different commercial banks between 1993 and 2003, it utilized the panel fixed and random effect regression approach. From a macroeconomic point of view, these results show that inflation and bank asset returns are linked. The impact of inflation on commercial bank lending in Nigeria from 2000 to 2019 is examined in Jaji's (2019) study. Multiple regression analysis is used in the study as one of the estimation approaches, and the outcome demonstrates that there was a negative correlation between the rate of inflation and commercial bank lending in Nigeria during the analyzed period.

### **3. Methodology**

The source of data for the paper is from central bank statistical bulletin, national bureau of statistics and world development indicator. Commercial banks base their lending decisions on many macroeconomic and microeconomic factors. According to Soludo (2008), banks must incur these expenses, many of which are strongly correlated with

interest rates, in order to cover the cost of expanding their product offerings. These additional charges include things like administrative costs, restrictions on a cash reserve ratio, and a liquidity ratio. This study demonstrates that there has been a long-term effect on commercial bank lending from the deregulation of interest rates. This work adapts and modifies Olumide's empirical model (2018). Their model was used to investigate how Nigerian monetary policy affected bank profitability. The following is the model specification:

$$CBLA = F(MPRT, INTRS, STLR, EXCH, INFL, Ut) \dots\dots\dots 1$$

The model then becomes:

$$CBLA = \beta_0 + \beta_1MPRT + \beta_2INTRS + \beta_3STLR + \beta_4EXCH + \beta_5INFL + Ut \dots\dots 2$$

Then take the log of both sides

$$LNCBLA = \beta_0 + LN\beta_1MPRT + LN\beta_2INTRS + LN\beta_3STLR + LN\beta_4EXCH + \beta_5INFL + Ut \dots\dots\dots 3$$

Where CBLA is the Commercial Bank Loan and Advances, MPRT is the Monetary policy rate, INTRS indicate interest rate speed (deposit – lending rate). The SLR signifies statutory liquidity rate, EXCH stands for Exchange rate, INFL means Inflation rate and *Ut* is the error term.

**4. Result**

Table 1: Unit Root Test Result

Variables	ADF T-Statistics	Order
LNCBLA	-3.544	I(1)
LNMPRT	-4.622	I(1)
LNINTRS	-5.549	I(1)
LNSTLR	-1.322	I(1)
LNEXCH	-3.388	I(1)
LNINFL	-5.629	I(1)

*Note: The 5% critical value for the ADF statistic is -2.95*

*Source: Author's Computation*

The outcome demonstrates that the monetary policy rate, interest rate speed, statutory liquidity ratio, exchange rate, and inflationary rate are stationary at the first difference, i.e., the variables are I(1) series. The absolute value of the ADF statistics is higher than the critical values of the ADF at the 5% level of significance, which reveals this fact despite the fact that the levels of variables are I(1), then carry out a test for co-integration among the parameters since the parameters are stationary at the first difference.

Table 2: Johansen Co-Integration Test Result

Series	Eigen Value	Trace Value	5% Critical Value	1% Critical Value	Hypothesized No of CE(S)
LNCBLA	0.566	26.56	25.11	44.12	None**
LNMPRT	0.489	31.78	29.32	34.11	At most 1
LNINTRS	0.874	36.65	33.44	31.54	At most 2
LNSTLR	0.662	38.72	37.51	28.28	At most 2
LNEXCH	2.333	42.55	44.38	26.42	At most 3
LNINFL	3.655	46.76	47.44	28.22	At most 4

*Note: (\*\*) denotes rejection of the null hypothesis at the 5% (1%) level respectively; Trace test indicates 1 co-integrating equation at both 5% and 1% level*

*Source: Author's Computation*



The null hypothesis states that there is no co-integration disproved by the aforementioned finding. The implication of this is that the variables that were included have a co-integration connection. Additionally, it demonstrates that there is a single co-integration equation at both the 1% and 5% levels, indicating that there is an equilibrium relationship over the long run between commercial bank loans and advances (LOA) and all of the explanatory variables (monetary policy rate (MPRT), interest rate speed (INTRS), statutory liquidity ratio (STLR), exchange rate (EXCH), and inflationary rate) (INFL). Thus, it is clear that the Commercial Bank Lending Operation in Nigeria and Commercial Bank Loans and Advances (CBL) have a long-term relationship.

Table 3: Result of Error Correction Model

Variable	Co-efficient	Std. Error	T Statistic	Prob
Constant	0.664	0.443	1.500	0.009
LNMPRT	0.877	0.677	1.294	0.002
LNINTRS	0.894	0.888	1.006	0.005
LNSTLR	0.666	0.764	0.871	0.007
LNEXCH	-0.192	0.204	4.511	0.441
LNINFL	-0.388	0.102	3.808	0.276
ECM (-1)	-0.742	0.766	0.968	0.001

Note: R Squared = 0.80; F Statistics = 29.32; D/W = 2.12

Source: Author's Computation

The following result demonstrates a positive correlation between commercial bank loans and advances and the monetary policy rate; i.e., a 1% rise in monetary policy would result in an 87.7% increase in commercial bank loans and advances. Since Nigeria's central bank changed how money works in the banking sector, loans and advances to customers from commercial banks have gone up by 87.7%. But there is a clear correlation between interest rates and commercial bank loans and advances, with a 1 percent increase in interest rates resulting in an 89.4 percent increase in these loans and advances. The outcome also demonstrates a clear and favorable association between commercial bank loans and advances and the statutory liquidity ratio, i.e., a 1% rise in the statutory liquidity ratio would result in a 66.7% increase in commercial bank loans and advances. The conclusion is that there will be more commercial bank loans when the statutory liquidity ratio goes up. The outcome also demonstrates a negative or inverse association between commercial bank loans and advances and the currency rate in Nigeria. A 1% increase in the exchange rate reduces commercial bank loans and advances by 19.2%. Additionally, there is a negative/inverse link between commercial bank loans and advances and the inflationary rate; a 1% rise in the inflationary rate would result in a 38.9% fall in commercial bank loans and advances. The dependent variable's variance is about 79 percent explained by the independent variables, whereas the remaining 21 percent is not accounted for in the model, according to the R squared of 0.788. The overall statistical significance of the model is tested using the F statistic, and since the F computed from the result is 29.33, at a level of significance of 5%, we can say that the model is statistically significant overall. Since the Durbin-Watson statistic (2) is within the allowed range, there is no serial autocorrelation. Since the probability value for the monetary policy parameter is 0.002, we can assume that it is statistically important and can be used to explain commercial bank loans and advances. The parameter interest rate is statistically significant because the probability value for the parameter interest rate speed is 0.005. The probability value for the parameter statutory liquidity ratio is 0.007, which shows that it is statistically significant

and can be used to explain commercial bank loans and advances. The probability value for the parameter exchange rate is 0.441. This means that it is not statistically significant and is not a good predictor of commercial bank loans and advances. Also, the inflationary rate, which has a probability value of 0.276, is not statistically significant and is not a good predictor of commercial bank loans and advances. The error correction model value is -0.742 and the absolute value is 0.742, which shows that during the period, about 74% of the disequilibrium in the commercial bank loans and advances from the prior year was corrected. This also seems to be important because it shows that the dependent and explanatory variables clearly explain the relationship between interest rates and commercial bank lending activity in Nigeria during the study period.

**Table 4: Regression Result for the Regulated Exchange Rate Period (1970-1986)**

Variable	Co-efficient	Std. Error	T Statistic
Constant	8.6	0.4432	19.40
LNMPRT	0.72	0.4451	1.61
LNINTRS	-0.11	0.0788	-1.40
LNSTLR	-0.06	0.0088	-6.82
LNEXCH	-0.48	0.2361	-2.03
LNINFL	0.04	0.0081	4.94

*Note:  $R^2 = 0.881$ ,  $Adj = 0.782$ ,  $RSS_1 = 1.441$ ,  $n = 17$ ,  $DW = 2.11$ ,  $F Statistics = 39.43$*

*Source: Author's Computation*

According to the findings for the first period, also known as the interest rate regulation period, which ran from 1970 to 1986, the variables and their co-efficient are shown in Table 4. The interest rate spread (-0.11), statutory liquidity ratio (-0.06), exchange rate (-0.48), and inflation rate (0.04) all followed their a priori expected signs, but the monetary policy rate (0.72) did not. This demonstrates that a unit rise in the interest rate spread, liquidity ratio, and exchange rate will result in a reduction in bank loans and advances of 11%, 6%, and 48%, respectively. A unit rise in the monetary policy rate and inflation rate will result in an increase in commercial bank loans and advances of 72% and 4%, respectively. All parameter estimations during this time period were statistically significant, with the exception of the statutory liquidity ratio, exchange rate, and inflationary rate. This is true since all of their t-statistics were bigger than 2 in absolute terms. With a very high adjusted R2 of 0.881, the model demonstrated a strong match. This means that the regressors could account for roughly 88 percent of the variation in commercial bank loans and advances.

**Table 5: Regression Result For The Deregulated Exchange Rate Period (1987-2018)**

Variable	Co-efficient	Std. Error	T Statistic
Constant	17.11	0.884	19.36
LNMPRT	-0.07	0.033	-2.11
LNINTRS	0.05	0.036	1.38
LNSTLR	-0.08	0.042	-1.90
LNEXCH	0.01	0.002	4.55
LNINFL	0.04	0.021	1.90

*Note:  $R^2 = 0.862$ ,  $Adj = 0.811$ ,  $RSS_2 = 14.422$ ,  $n_2 = 31$ ,  $DW = 0.722$ ,  $F Statistics = 38.282$*

*Source: Author's Computation*

The results during the deregulation era (Table 5) do, however, exhibit some degree of variation in terms of both signs and magnitudes. The inflationary rate (0.004), exchange rate (0.01), statutory liquidity ratio (-0.08), and monetary policy rate (-0.07) all

conformed to the predicted theoretical signals, but the interest rate spread (0.05) did not. According to the outcome, a rise in the difference between interest rates, the value of the dollar, and the rate of inflation will each cause a corresponding increase in commercial bank loans of 5%, 1%, and 4%. During the deregulation phase, however, a unit increase in MPRT and the statutory liquidity ratio will result in a 7 and 8% decrease in commercial bank loans and advances, respectively. The statistical significance test in this case reveals that the inflationary rate, statutory liquidity ratio, and interest rate speed were all statistically significant with a t stats-bj value of 2. Others, such as MPRT and inflation rate, did not reach statistical significance over the entire time period. The model fit well, with an R2 of 0.862, indicating that the regressors or period accounted for roughly 86 percent of the variation in commercial bank loans and advances. With high F-cal values of 39.43 and 38.282, which are well above their respective critical values of 3.20 and 2.68, both models were judged to be statistically significant at the 5% level.

Table 6: Regression Result for the Deregulated Exchange Rate Period (1970-2020)

Variable	Co-efficient	Std. Error	T Statistic
Constant	11.31	0.40	28.28
LNMPRT	0.22	0.081	2.716
LNINTRS	0.08	0.086	0.930
LNSTLR	-0.44	0.048	-9.167
LNEXCH	-0.61	0.088	6.931
LNINFL	0.08	0.084	0.952

Note:  $R^2 = 0.782$ ,  $Adj R2 = 0.689$ ,  $RSS_3 = 34.884$ ,  $n3 = 48$ ,  $DW = 0.23312$ ,  $F Statistics = 29.56621$

Source: Author's Computation

The outcome for the pooled period (Table 6) reveals that while the coefficients for the statutory liquidity ratio (-0.06), exchange rate (0.04), and inflation (0.004) are in line with the a priori theoretical expectations, the coefficients for the monetary policy rate (0.10) and interest rate spread (0.02) are not. Monetary policy ratio, statutory lending rate, and exchange rate all had statistically significant effects. From the analysis, the value of Chow test is 9.353, given the residual sum of squares, number of observation and parameters. With increasing sample sizes up until the post-SAP era, this test is employed to determine the structural stability of the explanatory variable parameters.

However, under the regulated interest rate system, commercial banks' loans and advances were very sensitive to changes in interest rates, which hurt their business. The interest rate spread helped bank loans and advances after deregulation. Before the experiment with liberalization, the fixed exchange rate made lending less likely, but not by much. The opposite was true with liberalization. So, the difference in interest rates and the minimum liquidity ratio had a big and bad effect on how many loans and advances were made. This means that interest rates on bank loans were very flexible when interest rates were controlled. As the difference between interest rates gets bigger, fewer loans and advances are available. The main reasons for this were that the financial market was not very developed at the time and that the bank deposit rate was lower. The inflation rate and the monetary policy rate had a big and good effect on loans and advances from commercial banks (MPR). For every change in any of these parameters, bank loans went up by 2.3% to 3%. Before deregulation, the fixed exchange rate had a negative effect on bank loans, but not enough to change how these loans were handled. During the time when interest rates were not controlled by the government, the statutory liquidity ratio and the monetary policy rate hurt the number of loans and

advances that banks made. Customers say that the increased administrative costs of commercial bank loans have hurt the number of loans. During the time of deregulation, the interest rate spread had a positive effect on bank loans. This showed that banks were likely to look for higher lending rates to cover these costs. Even if Mackinnon and Shaw's (1973) ideas are true, it is not clear that the expected operational and allocative efficiency will be as good as they say it will be. The fact that the model cannot be used anywhere is more proof that liberalization was sold to developing countries too much. This backs up earlier research that brought up serious questions about the idea that the interest elasticity of saving is very positive and clear in developing countries. The paper, on the other hand, shows that the claim is only true if interest rates are not regulated. In contrast to the small and negative relationship seen before between SAP (structural adjustment programme) and the exchange rate, it was found that the exchange rate had a big and positive effect on bank lending. Last but not least, the rate of inflation had an effect on commercial bank lending that was not all bad.

### **5. Conclusion and Recommendations**

Commercial banks still hold a significant percentage of the banking industry's overall assets and deposit liabilities. Even if institutional rules, constraints, and other macroeconomic variables restrict their ability to increase the overall amount of credit extended to the private sector, their total loans and advances continue to rise. The environment in which both commercial and government banks operate has a significant influence on how well they perform and how they conduct themselves. When conducting their company, they should keep this in mind. People work better and are more likely to make smart financial decisions when they work for companies that make the workplace a good place to be.

Banks, on the other hand, frequently perform poorly in uncertain and difficult circumstances. Although the macroeconomic situation appears stable, commercial banks should be mindful that there is much to be done to ensure that they are lending in an ethical manner. As a result, commercial banks should strive to develop rules that are simple to understand and employ sound credit management practices at all times. The empirical result indicates a change in policy when interest rates for loans and advances issued by commercial banks shifted from being negative under regulation to becoming positive under deregulation. As a result of deregulation, the effect moved from being negative to positive. Nigeria's productive economic sectors would benefit greatly from the government's intention to reduce interest rates. When it comes down to it, the policy is all about this. For the purposes of this analysis, changes in interest rates substitute those in lending and deposit rates. The results of this investigation show that when interest rates were no longer controlled by the government, there was a small but positive change in bank loans and advances.

This study shows that interest rates are not the most crucial element in many developing nations when it comes to securing loans (Nigeria inclusive). Commercial banks' lending decisions are influenced by the broader range of interest rate variations that have occurred since the SAP period. Even if interest rates on loans are quite high, they have little effect. Financial markets are dominated by commercial banks, which may explain why there is not much competition. Increasing administrative expenses, rising economic agent uncertainty and risk, and increasing market depth all contributed to the high interest rate during the period. Exchanging rates have had a significant impact on commercial banks' lending operation since banking deregulation. Savings in domestic financial assets are being put to better use because of rising expectations about the value

of the dollar. The study's findings reveal that the Monetary Policy Rate in Nigeria has a significant, but negative, impact on how commercial banks in the nation lend money. To understand why the Central Bank of Nigeria (CBN) has recently turned to the MPR to cut down on the rising number of loans that are not being paid back, one has to go no farther than the MPR. Following deregulation, the CBN needed to find a way to reduce the number of loans it was making. In reality, interest rates were a more important component in bank loans during the interest control era.

The study therefore recommends that commercial banks should be given low-interest loans by the Central Bank of Nigeria (CBN) through the use of essential monetary policy tools, including the monetary policy rate (MPR). Commercial banks will be better at lending and making more money if they come up with ways to get and keep financial deposits. If the government wants to lower interest rates and stimulate the use of bank loans, it should boost the supply of money in the market while still keeping inflation in check. Since the influence of the monetary policy rate is found to spread to other rates and have the desired effect, monetary authorities should utilize it more frequently to regulate the activities of commercial banks. Both the government and the Central Bank of Nigeria should collaborate on an effort to maintain low rates of inflation and borrowing costs. This would lead to an increase in lending and investment by commercial banks, as well as an improvement in Nigerians' standard of living and GDP. Given that various industries have varied risk profiles, commercial banks should be more creative in how they lend money. When figuring out the interest rate on loans, the risk level of the sector and the unique qualities of the customer should be taken into account. The interest rate will be determined by the availability of inexpensive deposits; therefore, commercial banks should hunt for more creative sources of these deposits. Commercial banks should plan how to get and keep more deposits if they want to make a big difference in how well they lend.

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