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MONETARY POLICY; IMPLICATION FOR INDUSTRIAL SECTOR

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Abstract

This study examines the impact of monetary policy on industrial sector performance from 1990 to 2020. Research objectives are to examine the impact of money supply on industrial sector performance in Nigeria; to examine the impact of monetary policy rate on industrial sector performance in Nigeria; to determine the impact of liquidity ratio on industrial sector performance in Nigeria. The study used Auto Regressive Distributed Lag (ARDL) in analyzing the data gotten from CBN Statistical Bulletin of various issues. However, the findings showed that; Money supply (BMS) had a positive and significant impact on industrial sector performance in Nigeria; Monetary policy rate (MPR) had a positive and insignificant impact on industrial sector performance in Nigeria; Liquidity ratio (LQR) had a negative and significant impact on industrial sector performance in Nigeria; and Credit to private sector (CPS) had a negative and significant impact on industrial sector performance in Nigeria. This study therefore concludes that monetary policy has played a significant role in the performance of the Nigerian industrial sector it was recommended that, the Nigerian government should consider revising down her rediscount rate to allow for more robust impact on industrial output.

Keywords: Monetary Policy, Money Supply, Monetary Policy Rate, Liquidity Ratio, Credit, Private Sector, Industrial Sector.

1.1 Introduction

Okonkwo, Egbulonu and Emerenini (2015) disclosed that Monetary Policy in Nigeria have not been effective over the years due to fiscal dominance through heavy and persistent government budget deficits, poor data quality that make econometric analysis difficult, inefficient payments system and poor banking habits where the CBN finds it difficult to control huge funds outside the banking system. The introduction of the Structural Adjustment Programme (SAP) in 1986 and all the attendant problems, recorded the industrial sector contribution to GDP at its best between 1986 and 1994. It was 28% in 1986 and had only slightly fell to 17% in 1990 and 1992 before rising to 25.34% in 1994. Between 1995 and 2009, the industrial contribution to GDP remained relatively stable at the bounds of 11% and 15%, before crashing to 6% in 2010. Since 2011 till 2017, the annual contribution of MANU to GDP was very low ranging between 7% and 9% (CBN, 2017) All the existing literature have failed to incorporate the three core market based instruments like monetary policy rate(MPR), Treasury bills rate(TBR), and Cash reserve requirement(CRR), in one model. Most of the existing studies of (Ezeaku, Ibe, Ugwuanyi, Modebe, & Agbaeze 2018; Bakare, Aremu, & Osobase 2015; Onakoya, Ogundajo & Babatunde 2017) among others employed the Johanson cointegration test that may not adequately moderate variables with level 1(0) and first difference 1(1) stationarity in a regression estimation. Any study that employed a more robust Autoregressive Distributive Lag (ARDL) approach is most likely to produce better and more

reliable empirical results as given by Harris & Sollis, (2003) and thus to be applied on monetary policy and industrial sector performance nexus in Nigeria, this hence prompted this research work on the impact of monetary policy on the industrial sector performance in Nigeria.

Objective of the study

The broad of objective of the study is to examine the impact of monetary policy on industrial sector performance in Nigeria. However, the specific objectives are:

i. To examine the impact of money supply on industrial sector performance in Nigeria.
ii. To examine the impact of monetary policy rate on industrial sector performance in Nigeria.
iii. To determine the impact of liquidity ratio on industrial sector performance in Nigeria.
iv. To ascertain the impact of credit to private sector on industrial sector performance in Nigeria.

2.0 Review of Related Literature

Theoretical Literatures

In order to appreciate the role of money and monetary policy in the economy, it became necessary to review the varied changing views on monetary influence. These roles are achieved directly as well as indirectly through feedback for the economy. Generally, when the quantities of money supply changes in relative to money demand, there are changes in relative prices and wealth. In Fisher's quantity theory of money, he stated that the quantity of money is the main determinant of the price level, of the value of Money. Any change in the quantity of money produces an exactly proportionate change in the price level, that is, as the quantity of money in circulation increases, the price level also increase in direct proportion and the value of money decreases and vice versa. Living fisher further assumed that the rise in commodity prices would precede the increase in interest rate which was regarded as the main channel of firms operating costs. Also, the rise in commodity price would lead to an increase in the firm's profits followed by increase in investment, and then demand deposit. Increase in loan demand and money stock which lead to a greater increase in community prices, investment and profits. Since interest rate is regarded as part of the operating cost of production, excess reserve for lending would run-out and even faster than commodity prices thereby leading to a rise in the cost of production. This would in turn lead to a decline in investment and profit. In his equation of exchange, Fisher specified that:

$MV=PT$ …….. (1)

Where: M= actual money stock

V= the transaction velocity of circulation of money.

P= the average price level

T= the number of transaction made per the period. Fisher now imposes the assumption that the equilibrium values of V, (the velocity of money) and T (the volume of transaction) will be fairly constant in the short-run and invariant with respect to changes in the quality of money. Given this assumption, the equation (1) can now be re-written as: $M\bar{V}=PT$…..…… (2) Where bars (-) signify that V and T are constant. Given that m is exogenous, there must be proportional relationship in equilibrium between money supply (m) and the general piece level. According to the Keynesian monetary transmission

mechanism, given the assumption that the economy is at less than full employment equilibrium, the built-in-policy transmission mechanism works through the financial system to the real sector via interest rate thus, de-emphasizing the role of money direct impact on the real sector. If the economy is at an initially equilibrium and there is an open market purchase of government securities by the CBN, the open market operation will increase the commercial banks reserves (k) and raises the banks reserves earning asset ratio. The banks then operate to restores their equilibrium by extending new loans such new loans create new demand deposit, thus, increasing the money supply (M). Given the public liquidity preferences, a raising money supply causes the general level of interest rate (r) to decline. The falling interest rate will in turn, stimulate investment and expected profits expressed as the marginal efficiency of investment (MEI).

Empirical Literatures

Omini, Ogbeba and Okoi (2017) employed the VAR (VECM) model and Granger causality test to investigate the impact of monetary policy shocks on industrial output in Nigeria between 1970 and 2015. The data on the contribution of the manufacturing and solid minerals subsectors to GDP was employed as the dependent variable while explanatory variables included monetary policy rate, exchange rate and bank credit to the industrial sector. Findings from the study revealed that the manufacturing sub-sector had a positive influence on monetary policy rate, commercial bank credit to industrial sector and exchange rates, while contribution of solid minerals sub-sector to GDP responded positively to shocks in commercial bank credit to the industrial sector and exchange rate after the first year. The causality test indicated a unidirectional relationship running from monetary policy rate and exchange rate to the contribution of manufacturing sector to GDP on the one hand, and commercial bank credit to the industrial sector and exchange rate to the contribution of solid mineral sector to GDP.

Osakwe, Ibenta & Ezeabasili (2019) examined the effect of monetary policy on the performance of the Manufacturing sector in Nigeria. The explanatory variables are monetary policy rate, Treasury bills rate, Cash reserve requirement and money supply; while the dependent variable is the Manufacturing (MANU) sector output. The study adopted an ex-post facto research design and used secondary data obtained from the CBN Statistical Bulletin. The study covered a period of 32 years (1986 to 2017). The data were subjected to Augmented Dicker Fuller stationarity test to determine the best suitable econometric tool of analyses. The Autoregressive Distributive Lag (ARDL) was used for the model estimation. The results indicate that: monetary policy tools have significant effect on the manufacturing sector output in Nigeria in the short run only. The study thus concludes that monetary policy tools may not be a long run policy instrument for the growth of the manufacturing sector output in Nigeria but rather short run instruments.

Ezeaku et al (2018) assessed the industry effects of monetary policy transmission channels in Nigeria within the period 1981-2014. Techniques of analysis employed in the study are the Johansen cointegration and the error correction model (ECM). Our regression estimates reveal that the private sector credit, interest rate, and exchange rate channels have negative effects on real output growth, both in the long run and in the short run. The results further show that, relatively, the degrees of the established effects are higher in the long run than in the short

run. We employed the Johansen cointegration approach to determine the nature of relationship that exists between our dependent variable and the independent variables. The results show that, in the Nigerian case, monetary policy transmission channels jointly have a long-run relationship with real output growth of the industrial sector, and disequilibrium in the system is corrected at the speed of 72.2% annually.

Loto and Musa (2018) examined the short and long run effects, of specific policy instruments combination, on each industrial sub-sector by decomposing industry into three major parts. The nonlinear ARDL bound test approach to co-integration is employed as estimation technique. It was found that a long-run bound relationship exists between selected policy variables and each industrial sub-sector. Error correction terms show that short run disequilibrium can be corrected in the long run without extended lag period. Financial deepening, exchange rate depreciation and economic openness are significant in the long run while monetary policy rate is effective in the short run. Deepening of financial system and prudential management of macroeconomic framework are recommended essential for industrial growth in Nigeria.

Shobande (2019) examines the impact of switching from direct to indirect monetary policy on industrial growth in Nigeria, using the annual time series data sourced from the Central Bank of Nigeria's (CBN) statistical bulletin between 1960 and 2015. The study adopts the Autoregressive Distributed Lag (ARDL) bound testing approach developed by Pesaran, Shin and Smith (2001) for estimating the relevant relationships. The result of the long-run estimates shows that domestic credit, interest rate and trade balance have positive impact on industrial output while money supply, inflation and exchange rate have negative impact on industrial growth. The result of the short-run dynamics shows that change in the previous (one and second lagged) periods of indirect monetary policy (interest rate, money supply, domestic credit and exchange rate) and industrial output were negatively related to change in industrial output. The error correction term indicates the speed of adjustment of equilibrium to their long- run position, which was found to be negative and significant. The study recommends that policy makers use both conventional and non-conventional monetary policies to speed up industrial output growth and enhance economic recovery by manipulating the macro-economic fundamentals

Akpunonu and Orajaka (2020) examined the effect of monetary policy on industrial growth in Nigeria between 1986 and 2019. Data for the study were collected from the CBN Statistical bulletin, 2019 edition. A multiple regression model was developed and the Ordinary Least Square (OLS) regression technique employed for data analysis. The results showed that Open Market Operation (OMO) measured by Treasury bill rate had positive and significant effect on the Nigerian Manufacturing Domestic Sector Gross Product; Cash Reserve Ratio (CRR) has a positive and significant effect on the Nigerian Manufacturing Sector Gross Domestic Product; and Monetary Policy Rate (MPR) has a negative and significant effect on the Nigerian Manufacturing Sector Gross Domestic Product. The study concludes that monetary policy is a veritable tool for enhancing industrial sector growth in Nigeria. It was recommended that the monetary authority should ensure a lower MPR that can drive up investment and thus boost growth of the industry.

Imoughele and Ismaila (2014) carried out a study to find out the impact of monetary policy on manufacturing sector performance in Nigeria for the period covering 1986 to 2012. The study employed external reserve, exchange rate, inflation rate, broad money supply and interest rate as the independent variables of monetary policy and manufacturing gross domestic product as the dependent variable. Findings from Johansson cointegration and VAR model revealed that external reserve, exchange rate and inflation rate were statistically significant to manufacturing sector output while broad money supply and interest rate were not statistically significant to manufacturing sector output in the previous and current year. However, interest rate, exchange rate and external reserve impacted negatively on the sector output but broad money supply and inflation rate affect the sector positively. The pair-wise Granger Causality results showed that real exchange rate and external reserves had a unidirectional causal effect on manufacturing output in Nigeria.

3.0 Methodology

Model Specification

The model modifies the empirical work of Osakwe, Ibenta & Ezeabasili (2019) who studied the impact of monetary policy on industrial sector performance in Nigeria. Their model specification had monetary policy variables of cash reserve ratio, monetary policy rate, money supply and Treasury bill rate as the exogenous variables against industrial output. This study modifies and extends his model by replacing cash reserve ratio and Treasury bill rate with credit to private sector and liquidity ratio as part of the explanatory variables to allow for a more focused model. While industrial output replaced industrial output.

The model is formulated thus:
Our model is a linear one of the form:
INDO = *f*(Xi)…… (1)
Where; INDO= Industrial output
Xi = set of chosen explanatory variables.
The chosen variables are reflected in the model as
INDO = *f* (BMS, MPR, LQR, CPS)…… (2)
Where,
INDO= Industrial output
BMS = broad money supply
MPR = monetary policy
LQR= liquidity ratio
CPS= Credit to private sector
The mathematical form of the model
$Y = b_0+b_1X_1 + b_2 X_2 + b_3 X_3+ b_4 X_4 + U$……(3)
Further, the work set out to present an Autoregressive Distributed Lag (ARDL) model. The ARDL model is stated as:

$$INDO_t = \alpha_0 + \sum_{i=1}^{p} \gamma_i BMS_{t-i} + \sum_{i=0}^{p} \beta_i MPR_{t-i} + \sum_{i=0}^{p} \beta_i LQR_{t-i} + \sum_{i=0}^{p} \beta_i CPS_{t-i} + \mu_{it} .....(4)$$

In order to obtain the co-integrating equation, equation 4 is transformed into 5 as follows:

$$\Delta INDO_t = \alpha_0 + \sum_{i=1}^{p} \gamma_i \Delta BMS_{t-i} + \sum_{i=0}^{p} \beta_i \Delta MPR_{t-i} + \sum_{i=0}^{p} \beta_i \Delta LQR_{t-i} + \sum_{i=0}^{p} \beta_i \Delta CPS_{t-i} + \phi ECT + \mu_{it} ..(5)$$

Where $ECT_t = Y_t - \alpha_0 - \sum_{i=1}^{p} \gamma_1 \Delta Y_{t-i} - \sum_{i=0}^{p} \beta_i \Delta X_{t-i}$ and $\phi = 1 - \sum_{i=1}^{p} \gamma_1 \Delta Y_{t-i}$.....(6)

The Bound test procedure used equations 4 and 5 into 7 as:

$$\Delta Y_t = -\sum_{i=1}^{p-1} \gamma_1 Y * \Delta Y_{t-i} + \sum_{i=0}^{p} \beta_i \Delta X_{t-i} - \rho Y_{t-1} - \alpha - \sum_{i=0}^{p} \delta X_{t-i} + \mu_{it} \text{.....(7)}$$

Then we test the existence of level relationship as $\varrho = 0$ and $\delta_1 = \delta_2 = ... = \delta_k = 0$
where Δ = difference operator, μ = white noise error term.

3.2 Diagnostic Test of the Model

Diagnostic test of the model were carried out using, unit root test, co integration, error correction, coefficient of multiple determination, R^2 analysis of variance and Durbin Watson statistics

3.2.1 Unit Root Test

To fully explore the data generating process, we first examined the time series properties of model variables using the Augmented Dickey- Fuller test.
The ADF test regression equations with constant are:

$$\Delta Y_T = \alpha_0 + \alpha_1 Y_{T-1} + \sum_{j=1}^{k} a_j \ \Delta Y_{T-1} + \varepsilon_T ... \qquad (8)$$

Where Δ is the first difference operator ε_T is random error term that is k = no of lagged differences Y = the variable. The unit root test is then carried out under the null hypothesis $\alpha = 0$ against the alternative hypothesis of $\alpha < 0$. Once a value for the test statistics

$ADF_\tau = \frac{\hat{\alpha}}{SE(\alpha)}$.....(9) is computed we shall compare it with the relevant critical value for the Dickey-Fuller Test. If the test statistic is greater (in absolute value) than the critical value at 5% or 1% level of significance, then the null hypothesis of $\alpha = 0$ is rejected and no unit root is present. If the variables are non-stationary at level form and integrated of the same order, this implies evidence of co-Integration in the model.

3.3.2 Test of Significance

The significance test were tested at 5% level of significance using the coefficients of the independent variables and following the Rule: Reject the Null hypothesis if the t-prob is less than 0.05, otherwise accept the Null hypothesis when t-prob is greater than 0.05 i.e. Reject if t-prob <0.05, Accept if t-prob > 0.05

3.3.3 Test of Hypothesis

The Hypotheses were tested using the probability of t-statistics: Reject the Null hypothesis if the probability of t-statistics is less than the critical value (0.05), otherwise accept the Null hypothesis when critical value (0.05) exceeds probability of t-statistics.

3.5 Data Source

The data to be used in this study shall be obtained from Central Bank of Nigeria (CBN) statistical bulletin 2020 and World Bank Development Indicators.

4.0 Data Analysis and Interpretation

Unit Root Test

A unit root test (ADF) was conducted to ascertain whether the variables in the model are stationary. This is necessary as it helps to avoid spurious regression results.

The summary of Unit Root Tests (ADF) results using E-views software is detailed in the table below:

Table 1: Summary of ADF test results at 5% critical value

VARIABLE	ADF TEST STATISTICS	CRITICAL VALUE 5%	ORDER OF INTEGRATION	DECISION RULE
LOG_INDO	**-4.3819**	**-2.9678**	**I✙ (1)**	**Reject Ho**
LOG_BMS	**-4.2984**	**-2.9640**	**I✙ (0)**	**Reject Ho**
MPR	**-3.0830**	**-2.9640**	**I✙ (0)**	**Reject Ho**
LQR	**-6.5466**	**-2.9678**	**I✙ (1)**	**Reject Ho**
LOG_CPS	**-4.0062**	**-2.94678**	**I✙ (1)**	**Reject Ho**

Source: Authors' computation with E-views 10

From table 1 above, observe that the variables broad money supply (LOG_BMS) and monetary policy rate (MPR) were integrated of order zero (I ~ (0)) as they were stationary at level form; while industrial output (LOG_INDO), liquidity ratio (LQR) and credit to private sector (LOG_CPS) wasn't not stationary at level form but was stationary after first difference which implies that it was integrated of order one (I ~ (1)). The decision is based on the fact the ADF statistics that is greater than the ADF critical values at 5%, we reject H_0 and conclude that the variable is stationary.

Since the variables are integrated of order one and zero and none of the variables is integrated of order two. We therefore, apply the ARDL bound co-integration test. But before we apply the ARDL bound co-integration test.

ARDL Bound Co-integration Test

Co-integration analysis helps to clarify the long-run relationship between integrated variables. A necessary condition for testing for ARDL bound co-integrating test is that each of the variables be integrated of either of order one or zero or both (Pesaran, Shin and Smith, 2001). Since all the variables are integrated of order one and zero, we proceeded to estimate the ARDL bound test. The null hypothesis of ARDL bound co-integration is that the variables are not co-integrated as against the alternative that they are co-integrated. The decision rule is to reject the null hypothesis if the F-statistics is greater than the upper bound critical values at chosen level of significance. The result of the ARDL co-integration test for the first and second objectives is shown in table 2 below.

Table 2: ARDL Bound Co-integration (5% critical value) Test Result for the model

F-Statistics	K	Significance level	Critical Bound Value	
			I0 (Lower Bound)	I1 (Upper Bound)
4.2061	4	5%	2.56	3.49

Source: Author's Computation with E-views 10

From table 2 the F-statistics for the model is 4.2061 and is greater than the upper (I1) bound of 3.49 at 5% level of significance. Thus, we reject the null hypothesis and conclude that there is presence of co-integration in the model. This implies that there is a long run relationship between monetary policy and industrial sector performance in Nigeria. Since there is a long run relationship we therefore estimate the short run and long run ARDL regression models and the results are presented in tables 3 and 4 below respectively:

Test for Short Run Relationship

The error correction term enables us to gauge the speed of adjustment of the monetary policy variables to its long-run effect on Industrial sector performance in Nigeria. It gives the proportion of the disequilibrium errors accumulated in the previous period which are corrected in the current period.

Table 3: Summary of Parsimonious Short Run Relationship Result between monetary policy and industrial sector performance in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)*	**-0.348753**	**0.063155**	**-5.522136**	**0.0000**

Source: Author's Computation with E-views 10

From table 3 above; the coefficient of the error correction term (cointEQ) is statistically significant and carries the expected negative sign at 5% level of significant. The speed of adjustment is 0.3488 that is 34.88% of the adjustment to equilibrium of industrial output is expected to occur in the long run. This result indicates that ignoring error correction in non-stationary time series analysis would lead to misspecification of the underlying process to achieve industrial output equilibrium.

Test for Long Run Relationship

It's imperative to examine the implications of the long run coefficient of the exogenous variable on the endogenous variable. The ARDL long run coefficient test is as shown in the table below;

Table 4; Summary of Long Run coefficient of monetary policy variables as its affect the performance of the industrial sector

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_BMS	0.864003	0.301063	2.869838	0.0084
MPR	0.003377	0.006689	0.504796	0.6183
LQR	-0.006004	0.002489	-2.412104	0.0239
LOG_CPS	-0.725766	0.281060	-2.582243	0.0163
C	8.387745	0.215100	38.99470	0.0000

Source: Author's Computation with E-views 10

Interpretation of Long Run ARDL Result

INDO= 8.3877 + 0.8640BMS + 0.0034MPR – 16.7371LQR – 6.6400CPS

The long run coefficient from table 4 above shows that the joint impact of all exogenous variables (CPS, MPR, BMS, and LQR) on the endogenous variable will amount to 8.3877 units; this is on the basis that they are all held at constant. In other word if the monetary policy variables are held at constant, the Nigeria's Industrial output will amount to 8.3877unit.

Broad Money Supply (LQR)

Broad money supply had a positive coefficient of 0.8640 suggesting that on the long run, if there is an increase in money supply by a unit, it will cause Nigeria's Industrial output to change by 0.8640 units. The significance test shows that money supply has significantly impacted on industrial output and will continue to do so on the long run.

Monetary Policy rate (MPR)

Monetary policy rate has a positive coefficient, and hence is positively related to industrial output. The result revealed that if central monetary authority's minimum discount rate changes by a unit, it causes Nigeria' industrial output to change by 0.0034 units, all things being equal. The relationship was however statistically insignificant at 5% level

Liquidity Ratio (LQR)

The coefficient of liquidity ratio was negative, suggesting a negative relationship with industrial output in Nigeria. This entail that if the liquidity ratio changes by a unit, it will cause a -0.00604 unit change Industrial output. The relationship was statistically significant at 5% level.

Credit to private sector (CPS)

Credit to private sector is negatively related to industrial output, and is statistically significant at 5% level. The result revealed that if the credit availability to the private sector were to increase by a unit, it causes industrial output to change by 0.7257 units, all things being equal.

Diagnostic Test

Table 5- Diagnostic test table

Diagnostic Test	**Result**	**Decision**
Adj. Coefficient of determination (R^2)	0.9477= 94.77% =99.83%	**Very strong fitness**
F-statistics **Prob. (F-stat)**	=106.1077 (0.0000) =0.0000	**Model is significant**

Source: Author's computation on E-views 10

Coefficient of Determination

The coefficient of determination from table 5, showed that adjusted R-squared was 0.9477. This shows that the Explanatory variable could explain up to 94.77% of the total variation in the model. In other words, monetary policy variables (money supply, monetary policy rate, liquidity ratio and credit to private sector) explains up to 94.77% of the total variations in industrial output in Nigeria.

Overall Test of Significance

The F-stat as shown in table 5; Given the F-values of 106.1077 with probabilities of 0.0000, reveals that the overall regression is statistically significant, entailing that monetary policy possesses a joint significance with industrial sector performance in Nigeria.

Test of Hypotheses

Hypothesis 1

Ho_1: broad money supply has no significant impact on industrial sector performance in Nigeria

Conclusion

From table 5 above (ARDL long run coefficient result), the probability of t-stat of parameter (BMS) was 0.0084, and less than 0.05 critical values. Thus we reject the null hypothesis and conclude that broad money supply have a significant impact on industrial sector performance in Nigeria.

Hypothesis 2

Ho_2: monetary policy rate has no significant impact on industrial sector performance in Nigeria

Conclusion

From table 5 above (ARDL long run coefficient result), the probability of t-stat of parameter (MPR) was 0.6183, and greater than 0.05 critical values. Thus we accept the null hypothesis and conclude that monetary policy rate has no significant impact on industrial sector performance in Nigeria.

Hypothesis 3

Ho_3: liquidity ratio has no significant impact on industrial sector performance in Nigeria

Conclusion

From table 5 above (ARDL result), the probability LQR is 0.0239 and less than 0.05. Thus we reject the null hypothesis and conclude that liquidity ratio have a significant impact on industrial sector performance in Nigeria.

Hypothesis 4

Ho_4: Credits to private sector have no significant effect on industrial sector performance in Nigeria

Conclusion

From table 5 above (ARDL result), the probability exchange rate (CPS) is 0.0000 and less than 0.05. Thus we reject the null hypothesis and conclude that credit to private sector have no significant impact on industrial sector performance in Nigeria

5.0 Summary of Findings, Conclusion and Recommendations

The study examined the impact of monetary policy on industrial sector performance Nigeria from 1990 to 2020. The ordinary least square (OLS) technique was used to ascertain the parameters' estimates. The analysis results showed that; Money supply (BMS) had a positive and significant impact on industrial sector performance in Nigeria; Monetary policy rate (MPR) had a positive and insignificant impact on industrial sector performance in Nigeria; Liquidity ratio (LQR) had a negative and significant impact on industrial sector performance in Nigeria; Credit to private sector (CPS) had a negative and significant impact on industrial sector performance in Nigeria.

Conclusion

The study sought to examine the impact of monetary policy on industrial sector performance from 1990 to 2020. Research objectives stated in section one of the study was analyzed in the section four of this study. Based on the objectives, monetary policy of money supply, credit creation and liquidity ration were plausible and significantly impacting on Nigeria's industrial sector performance as they significantly impacted on industrial output. However, that of monetary policy rate was insignificantly impacting on industrial sector performance in Nigeria. The fisher's joint test answered the broad objective of the study and revealed that monetary policy have a significant impact on the growth of industrial output. Hence, monetary policy t can be said to have resulted to improved industrial sector performance in Nigeria. This study therefore concludes that monetary policy has played a significant role in the performance of the Nigerian industrial sector.

Recommendations

For Nigeria's industrial sector to continuously benefit from monetary policies, the following recommendations ought to be considered: Findings from the study showed that the use of interest rate as a monetary tool has not significantly improved industrial output in Nigeria. This may be attributed to the direction of credit flows to big businesses rather than small one by the financial sector. The galloping inflation being experienced by the nation has as well pushed nominal interest rate high and made credit unattractive. Hence the Nigerian government should consider revising down her rediscount rate to allow for more robust impact on industrial output; Since money supply was seen to have positive effects on

industrial sector output, the study recommended that the CBN should employ an expansionary monetary policy that can increase money supply to the real sectors and boost output performance of the manufacturing sector in the Nigerian economy; The CBN should stop financing the government budgets through the banking system. This has become necessary as such practice put pressure on bank reserves and deposit which result to financial repression and subsequently real interest rate will go up which will eventually crowd out private investment and businesses. This will affect manufacturers adversely.

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