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Macroeconomic factors and SMEs funding in Nigeria

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Abstract: This study examines the nexus between macroeconomic factors and SME funding in Nigeria. It employs data for Nigeria between the periods of 1994-2023. The specific aim of the study is to examine the impact of Macroeconomic factors on SME funding in Nigeria. The study employed the Ordinary Least Squares (OLS) technique and the Granger Causality approach to check for the possibility of a causal relationship between SME funding, and Economic growth. The result of the study revealed the following: selected Macroeconomic factors such as Real Gross Domestic Product, Gross fixed capital formation as a percentage of GDP have a negative and significant impact whereas Exchange rate has a positive and significant impact on SME funding [proxied as commercial bank loans to SMEs];Interest rate and Gross fixed capital formation as a percentage of GDP have a negative but significant impact on SME funding [proxied as commercial bank loans Total credit to Private sectors] and finally, Interest rate, Inflation rate and Gross fixed capital formation as a percentage of GDP have a positive and significant impact on SME funding [proxied as Commercial Bank Loans to SME as a percentage of Total Credit]. This suggests that Gross fixed capital formation as a percentage of GDP is a key or vital determinant of SME activities. Finally, the result shows a uni-directional causality relationship from SME funding to Economic growth. The study recommends careful considerations on the use of monetary policies instrument in increasing or ensuring the availability of finance or funds to small and medium scale Enterprises.

Keywords: *Macroeconomic factors, SMEs funding, commercial bank loans, GDP, Inflation, fixed capital formation.*

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Introduction

Nigeria was an Agrarian economy before the discovery of oil, that relied on the export of various cash crops such as Cocoa, Rubber, and Timber etc. This contributed significantly to the nation's gross domestic product and foreign earnings (Balami, 2006). The Central Bank of Nigeria stated that as of 1965, agriculture accounted for 65% of the nation's GDP and over 62% of its foreign exchange (CBN,2009). Unfortunately, the potential of the agricultural sector wasn't nurtured but ignored upon the discovery of oil. The contributions of the agricultural sector to the GDP of Nigeria gradually dwindled and over subsequent years, the nation's revenue has been largely dependent on its oil output. Essentially, the once-thriving agricultural sector which was thought to be Nigeria's pathway to economic growth was sidelined, this due to the immediate and then immense contribution of oil to the economy (Ojo, 2000). Nigeria's overdependence on oil has ultimately ensured it would experience the consequences of the economic phenomenon known as "the Dutch disease".

In developing countries such as Nigeria, the operations of small and medium scale enterprises (SMEs) have played a major role in the attainment of economic growth. According to the World Bank report (2015), "SMEs account for the majority of businesses worldwide and are important contributors to job creation and global economic development. SMEs represent about 90% of businesses and more than 50% of employment worldwide with Formal SMEs contributing up to 40% of national income (GDP) in emerging economies. These numbers are significantly higher when informal SMEs are included". Small and medium scale enterprises (SMEs) play a big role in the Nigerian economy and economies around the globe as they SMEs outnumber large companies by a wide margin and also employ many more people. They are also said to be responsible for driving innovation and competition in many sectors of the economy (SMIEIS, 2002)

In Nigeria, there is no clear-cut definition that distinguishes a purely small-scale enterprise from a medium-scale enterprise. The Central Bank of Nigeria (1988), defined small-scale enterprises as having an annual turnover not exceeding 500,000 naira for purposes of commercial bank loans (SMEDAN, 2019). The ease of startup and use of minimal capital remains the greatest asset of these enterprises, as they continue to raise the level of employment and productivity in the Nigerian economy. It is believed that SMEs as proven globally, can be a catalyst for economic growth, if adequately nurtured and protected (Etuk et al, 2014). The major hinderances or constraints to the operations and growth of these SMEs are the lack of access to finance and credit facilities or funding and lack of competitiveness due to economic instability (NBS, 2013). Hence, the intervention of government in the issue of SME expansion and growth is subsequently pertinent in ensuring the potential of these enterprises are fulfilled. Government intervention through the provision of an enabling economic climate through the implementation of fiscal and monetary policies can remedy the plight of these enterprises (Etuk et al,2014).

Much recently, the economic climate in Nigeria has not been favourable with the instability in global oil prices which

handicapped the nation's oil revenue to the overwhelming depreciation in the value of the Naira. Similarly, the level of unemployment in Nigeria has been staggering. According to the National Bureau of Statistics (2020), "the joblessness rate in Nigeria rose to 33.3% in the three months through December 2020. That is an increase from 27.1% in the second quarter of 2020. Also, it was reported that "a third of the 69.7 million-strong labor force in Africa's most-populous nation either did nothing or worked for less than 20 hours a week, making them unemployed, according to its definition. Another 15.9 million worked less than 40 hours a week, making them underemployed". Likewise, the performance of the inflation rate has also been underwhelming. Consumer prices have skyrocketed as a result of scarcity of raw materials and commodities and the value of the Naira has plummeted. African powerhouses like South Africa, Morocco, Tunisia, and Ghana etc all comparatively possess currencies of higher value. Coincidentally, these countries have maintained a single-digit inflation rate in recent times, whereas Nigeria has achieved a double-digit inflation rate in six of the last nine years further depreciating the value of the Naira. This downward trend in the performance of these macroeconomic indicators or factors have ultimately contributed to Nigeria's current level of economic growth and development. This trend have affected the ability of the Small and medium scale enterprises to compete, with the increasing cost of raw materials sourced either locally or abroad and the availability of finance and credit facilities etc.

A report by the Small and Medium Scale Enterprises Development Agency of Nigeria (SMEDAN) in 2024 details Personal Savings as the highest source of capital in both the formal and Informal sectors of the economy accounting for 61% and 56% respectively. This data reveals the shortcomings of the government in promoting the growth of these enterprises. SMEs could be an unorthodox approach to economic growth and development if and only if, not constrained by finance etc and government intervention, could ensure their already commendable contribution to the economy gradually becomes the basis on which Nigeria attains sustainable growth. The effect of macroeconomic indicators on the finance or access to funds available to Small and Medium Scale enterprises is what this study seeks to reveal.

The growth of SMEs has been hampered by the poor performance of the Macroeconomic factors in several ways and has effectively led to the closure or "folding-up" of several enterprises. The implications are the inability of SMEs to source raw materials both domestic and foreign at cheap and consistent prices. This also eliminates any room for these enterprises to compete globally. This situation inadvertently leads to an increase in the level of unemployment and inflation caused by a decrease in the level of productivity of the SMEs due to the scarcity of goods and a reduction in the labour force. Hence, these fluctuations nullify the positive impact that SMEs contribute on the economy. (Olalekan, 2010). Alarmingly, adequate investigation as to the relevance or prominence of these macroeconomic factors to the Small and Medium Enterprises in Nigeria has not been carried out. Hence this study examines macroeconomic factors and SME funding in Nigeria. Following this introduction, the rest of the paper considers literature review in section two, methodology in section three, discussion of findings section four and section five concludes the paper

Review of related literature

The Macroeconomic Factors

Macroeconomic factors include economic growth captured by gross domestic product (GDP), interest rates, exchange rates, and the inflation rate (Achillah, 2011). Macroeconomic variables refer to variables that affect national income, output, consumption, unemployment, inflation, savings, investment, international trade and are independent of the income levels (Bhattacharyay,2013). They are factors that greatly influence economic growth and development. They deal with the performance, structure, behavior, and decision-making of an economy as a whole, rather than individual markets. These Macroeconomic variables are indicators or quality variables signaling or describing the current trends in the economy. As already established, the management and performance of the Macroeconomic factors are pivotal to the smooth running of the economy as Macroeconomic stability continues to be at the center of economic policymaking (Osoro & Ogeto, 2014).

According to Agade (2014), macroeconomic factors affect the economy as a whole, rather than just a single unit. Relationships or linkages exist among these factors and it is observed that mismanagement of macroeconomic factors such as the Gross domestic product has adverse effects on other macroeconomic factors such as Unemployment rate, exchange, inflation and interest rate, etc. Conversely, improvements in the management of factors such as Interest, Inflation, and Unemployment rates cumulatively improve the level of productivity in the economy, thereby increasing Gross Domestic Product. The key macroeconomic indicators selected for the study are exchange rate, unemployment rate, interest rate, inflation rate and gross domestic product growth rate.

Small and Medium Scale Enterprises

According to Opafunso and Adepoju (2014), Small and Medium Scale Enterprise (SME) have proved to be a major tool adopted by the developed nations to attain socio-economic development. They further stated in recent times, the small-scale industrial sector is considered to be the backbone of the modern-day economy. With the scarcity of resources, government expenditure often excludes the substantial outflows towards the provision of necessities for improvements in the welfare of its citizens. Consequently, Offor (2012) believes that the contribution of Small and Medium Enterprises to the growth and development of an economy has been the focus of general interest and research, especially in developing countries due to the importance of Small and Medium Enterprises to the global economy.

According to the Nigeria National Council on Industry (NNCI), an SME is defined in terms of employment (i.e., as one with between 10 and 300 employees). Currently, small and medium-sized enterprises are defined by their size. In the European Union, SMEs are defined as small or medium if it employs more than 250 employees and not more than £50 million turnovers respectively, etc. Likewise, the Small and Medium Industries Equity Investment Scheme (SMIEIS) in Nigeria, defines small and medium enterprises (SMEs) as "enterprises with a total capital employed of not less than N1.5 million, but not exceeding N200 million, including working capital, but excluding the cost of land and/or with a staff strength of not less than 10 and not more than 300.

In recent years, the importance and relevance of SMEs cannot be overstated, with these enterprises serving as alternate routes to economic growth and development. This view is buttressed by the deliberation of Chiyah and Forchu (2010) that the promotion of micro-enterprises in developing countries is justified in their abilities to foster economic growth, alleviate poverty and generate employment.

Small and Medium Enterprises are independent firms or enterprises established with ease by the populace (households, individuals, etc) primarily as a means of livelihood. They are primed to tackle the menace of unemployment while improving the welfare of the employer and the employee. Most notably the MSME report (2017) reveals that SMEs in Nigeria account for 76.5% of the National workforce, 49.78% of the GDP, and 7.64% of export receipts (SMEDAN,2019). These enterprises especially the “micro” kind, which is predominately set up by households, is referred to as an “opportunity" enterprise. It serves the national aspiration of jobs/wealth creation at a time when the level of unemployment is problematic.

Theoretical framework

There are a number of theories posited in the literature as a framework macroeconomic factors and SMEs funding. The main thrust of these theories attempts to establish the connection of macroeconomic theories with SME financing to determine how financial systems, policy and economic stability gives impetus to credit access and economic or growth performance. The fundamental theories are anchored the well-known Keynesian theories, the financial intermediation theories, as well contingency theories which links enterprise survivals to macroeconomic indicators stability. The Keynesian theory basically focuses and argues the need for government intervention in economic and business processes, while the theory of intermediation explains the role of bank credit in driving business survival and of course the contingency theories stresses how indicators such as exchange rates, inflation and interest rates can influence both economic and financial system stability.

Empirical Literature Review

A lot of studies have been committed to the explanation either in part or whole of the relationship between the Macroeconomic factors and SME funding in Nigeria. The findings of each study tend to justify or refute several underlying debates surrounding the conceptual interrelationship between the macroeconomic conditions present in an economy and the level of SME funding available. In this section, we shall examine several studies of foreign and domestic literature with emphasis on their objectives, time scope, methodology, and findings.

To establish this point, Halim et al (2017) in their paper explored the profitability of SMEs in Malaysia using multiple regression analysis. From the simulations made, the study argues that macroeconomic variables play a prominent role in propelling SMEs to attain sustainable growth. The study shows specifically that the exchange rate has a small positive impact on SME GDP growth rate and the interest rate has a strong positive impact while the inflation rate has a strong negative impact. Therefore, it can be concluded that the interest rate and inflation rate have significant impacts on the profitability of SMEs in Malaysia.

A review of the impact of Macroeconomic Indicators upon SME profitability in Lithuania as conducted by Bekeris (2012) has it in his research that Interbank interest rate changes and unemployment have the greatest impact on profitability with the model including macroeconomic factors affecting the profitability of an SME such as population and firms’ number in a country, exports and imports, FDI, GDP, unemployment, inflation, taxes paid, average salary, and several others.

Evidence from a panel data analysis consisting of seven Central and East European countries within an annual period of 2008 to 2014 reveals that the macroeconomic performance indicators are significantly affecting SMEs employment and implicitly the SMEs performance. Specifically, the result of this study by Rusu and Roman (2016) demonstrates a positive correlation between total private final consumption, Gross Domestic Product growth, gross capital formation, and SME employment. The measures or determining factors were the real gross domestic product growth, total tax rate, gross capital formation, exports of goods and services, private final consumption, and changes in average monthly wages.

Mihajlovic, Rajkovic, and Hinic (2015) presented a paper that models the macroeconomic factors affecting the profitability of an SME. With three panel equations for three different data sets estimated, the macroeconomic indicators included were as such: population and firms’ number in a country, exports and imports, FDI, GDP, unemployment, inflation, taxes paid, average salary, and several others. For all three sub-periods, we obtained coefficients that are positive, significant for a sample of 44 European countries.

Khariza (2020) analyzed the effect of Macroeconomic Factors on The Small-Medium Enterprises Loans in Indonesia. The study also sought to examine the impact of developmental disparities between the West Indonesia Region and East Indonesia Region on credit demand. This research combines time-series data from 2011-2018 and 33 provinces' cross-sectional data to investigate the relationship of SMEs’ Loans with these macroeconomic factors. The result shows that Interest Rate, RGDP, and Inflation, affect SMEs Loans in a respectively different manner. The study concludes that macroeconomic activities are important indicators not only the interest rate.

Book and Ekelof (2019) in their thesis examined the effects of macroeconomic factors on SMEs in Sweden, with the usage of multiple linear regression. The data was collected for 10 years, from 2009 to 2019, at a monthly interval. Subsequently from their results, they inferred that a significant relationship existed between the macroeconomic factors and the Small and Medium Enterprises in Sweden with 98% of the variation in SMEs explained.

Adekunle et al (2016) used an Ordinary least square method of estimation within the period (1985 – 2013) of study to analyze Macro-Economic Variables and Its Impact on Nigerian Capital Market Growth. The study revealed that interest rate has an adverse effect on capital market growth with the Inflation and exchange rates however not significant, especially at the 5% level of significance.

Nwala and Fodio (2019) tried to investigate the effect of Macroeconomic variables on Financial Sector Development in Nigeria. They examined the period of 1984-2017 utilizing Auto Regressive Distributive Lag (ARDL) to analyze whether inflation,

money supply, financial openness, trade openness, and government expenditure significantly affect Financial Sector Development in Nigeria. Their findings detailed that money supply, interest rate, financial openness, and inflation significantly impact Financial Sector Development in Nigeria.

Onyebuchi and Nwachukwu (2019) established some issues of concern in their research study. Their study investigates the effect of selected macroeconomic variables fluctuation on private domestic investments in Nigeria. In their study, they adopted time-series data from 1986 to 2017 which were drawn from Central Bank of Nigeria (CBN) statistical bulletin various issues. From their findings, the exchange rate exerts a positive and significant response to private domestic investment in Nigeria. While inflation rate and interest rate have negatively affected the growth of Private Domestic Investment in Nigeria.

In a research work that combines descriptive and inferential analytical techniques of the SPSS, Alabi, David, and Aderinto (2019) evaluated the impact of government policies on business growth of small and medium enterprises that operates in six states that make up the South-west geopolitical zone of Nigeria. The study adopts a descriptive ex-post facto type and involved both primary and secondary data. Findings revealed that there is a significant relationship between government policy and business growth of Small and Medium Enterprises (SMEs) in South-Western Nigeria.

Another contribution to the wealth of knowledge on Macroeconomic factors and small and medium enterprises is the work of Dutse and Aliyu (2017). Their study examined the impact of Macroeconomic Factors and Entrepreneurship in Nigeria. Secondary data from the World Bank data bank between 2006-2015 was used for the study and analyzed using the STATA 13 package. The result yielding that most Nigerian macroeconomic factors have an insignificant impact on the development of entrepreneurship in the country.

A fair conclusion on the studies reviewed herein would be based on the fact that they have all contributed to the spectrum of scholastic efforts in investigating the relationship among macroeconomic factors, SME Funding, and economic growth. The contributions however not absolute and exhaustive, have contributed to contemporary comprehension and knowledge as well as the efforts already put in to combat the challenges which Macroeconomic factors bequeaths to SME Funding cum economic growth.

Methodology

Model Specification

This study in line with Gujarati's (2013) forms of model specification will appropriately specify three models according to the objectives of the study. The models are specified based on three forms as follows:

Model

This model is designed to examine the impact of macroeconomic factors on SME funding in Nigeria. An estimation equation can be derived to adequately capture this objective. Therefore, commercial bank loans to SMEs is taken to be a function of exchange rate, inflation rate, interest rate, real Gross Domestic Product, unemployment rate and gross fixed capital formation as a percentage of the GDP. This can be abbreviated into a functional relationship as in equation (3.2):

LCBE = f (EXCR, INF, INTR, LRGDP, UNEM, GFCFP) ……3.2

The mathematical function for model 1 is given as:

$$LCbe_t = \alpha_0 + \beta_1 Exch_t + \beta_2 Inf_t + \beta_3 Intr_t + \beta_4 LRGdp_t + \beta_5 Unem_t + \beta_6 Gfcfp_t \ldots\ldots..3.3$$

For the purpose of estimating the mathematical relationship of both the endogenous and exogenous variables, equation (3.3) is transformed into the econometric equation (3.4)

$$\boldsymbol{LCbe_t} = \alpha_0 + \beta_1 Exch_t + \beta_2 Inf_t + \beta_3 Intr_t + \beta_4 LRGdp_t + \beta_5 Unem_t + \beta_6 Gfcfp_t + \mu_t \ldots 3.4$$

Where: L = Natural logarithm of a particular variable; CBE = Commercial Bank Loans to SME; CPS = Commercial Bank Total Credit to Private Sector; CPT = Commercial Bank Loans to SME as a percentage of Total Credit; RGDP = Real gross domestic product; EXCH = Exchange Rate; INF = Inflation Rate; INTR = Interest rate; UNEM = Unemployment rate; GFCFP= Gross Fixed Capital Formation as a percentage of GDP; α_0 = Intercept term or constant parameter; μ_t = The random or error or stochastic term; t = The time series property of the respective variables; Φ = speed of adjustment parameter with a negative sign; β_1, β_2, β_3, β_4,β_5,β_6 = The Regression parameters and slopes of the respective explanatory variables.

Results and Discussion

This chapter focuses on the analysis of results and discussion of findings obtained from various statistical and econometric tests conducted on the models. These analyses is based on the research questions, objectives and hypothesis propounded in the previous chapters of this dissertation.

Descriptive Statistics of the Variables

TABLE 4.1: Descriptive Statistics of the Variables

Variable	Mean	Std Dev.	Skewness	Kurtosis	Jarque-Bera	JB P-value	Obs.
LCBE	10.09968	0.71494	0.15253	1.986502	1.242297	0.53732	29
LCPS	14.18839	2.00719	-0.31639	1.777125	2.29078	0.31810	29
CPT	7.16437	8.07657	0.838076	2.553977	3.635173	0.16242	29
LRGDP	26.22845	0.45261	0.166891	1.428856	3.11738	0.21041	29
EXCH	115.2871	83.0922	0.576691	2.996246	1.60745	0.44765	29
INF	18.49486	17.1422	2.019549	5.907345	29.9267	0.00000	29
INTR	18.85729	3.30546	1.568340	5.839254	21.62931	0.00002	29
UNEM	14.35552	7.08074	0.516334	2.135226	2.192204	0.33417	29
GFCFP	28.23094	11.9182	0.399547	1.908103	2.212205	0.33084	29

Source: Author's Computation from E-views 10

The table 4.1 above gives a summary of the descriptive statistics of the variables used in the models. They show the measures of central tendencies and dispersion of the data. The table further shows the variables from their face value that is, in their raw state. There are 29 observations for each of the variables. The mean values of RGDP, Inflation rate, Interest rate, Exchange rate, Gross Fixed Capital Formation as a percentage of GDP, Unemployment rate, Commercial Bank Loans to SME, Commercial Bank Total Credit to Private Sector, and Commercial Bank Loans to SME as a percentage of Total Credit are all greater than their Standard deviations. This implies that the all the times series data is clustered towards the mean. In terms of skewness, all the variables are greater than zero (0) except Commercial Bank Total Credit to Private Sector which means that they are positively skewed. The Jarque-Bera probability values greater than 5% level of significance as well as kurtosis value less than three (3) show that all the variables are normally distributed. Since the error terms are normally distributed, they fulfill one of the assumptions of OLS.

4.2 Pre-Estimation Test Results

4.2.1 Unit Root Test Result

TABLE 4.2.1 Augmented Dickey-Fuller Test Results

Variable	Adf T-Stat At Levels	5% Critical Value	Adf T-Stat At 1st Difference	5% Critical Value At 1st Difference	Order Of Integration	Decision
INF	-2.027583	-2.967767	-4.358594	-2.971853	I(1)	Stationary at 1st difference
EXCH	0.636834	-2.967767	-3.826595	-2.971853	I(1)	Stationary at 1st difference
INTR	-0.618012	-3.004861	-4.951779	-3.004861	I(1)	Stationary at 1st difference
GFCFP	-2.467393	-2.971853	-4.299456	-2.976263	I(1)	Stationary at 1st difference
UNEM	2.310031	-3.004861	-5.178177	-2.998064	I(1)	Stationary at 1st difference
LCPS	-0.64578	-3.5806	-4.417288	-3.5806	I(1)	Stationary at 1st difference
CPT	0.386034	-3.612199	-4.453498	-3.612199	I(1)	Stationary at 1st difference
LCBE	-1.1515	-3.5875	-1.5240	-3.5875	-	-
LRGDP	-2.1847	-3.6222	-2.4858	-3.5875	-	-

Variable			Adf T-Stat At 2nd Difference	5% Critical Value At 2nd Difference	5% Critical Value At 2nd Difference	Order Of Integration
LRGDP	-	-	-4.016471	-3.6222	I(2)	Stationary at 2nd difference
LCBE	-	-	-12.1906	-3.5875	I(2)	Stationary at 2nd difference

Source:Author's computation from E-views 10

Test Hypotheses: H_0: Unit root problem (it is not stationary); H_1: No unit root problem (it is stationary)

Decision Rule: Reject H_0 if |T-stat| or |T-cal| < |Ttab| or critical value or ADF at 5% level of significance and conclude that there is a unit root problem. Hence, it is not stationary. Do not reject if otherwise

Interpretation: From our Augmented Dickey Fuller test for stationarity result above, the t-stat at levels for all the variables in absolute sense is less than the 5% critical value at levels in absolute sense. We do not reject H_0 and conclude that there is unit root problem, hence it is not stationary. Since it is not stationary, we consider the test at 1st difference. From the table above, the t-stat at 1st difference for all of the variables except **LRGDP** and **LCBE** in absolute sense is greater than the 5% critical value at 1st difference in absolute sense. Hence, we reject H_0 and conclude that there is no unit root problem, thus it is stationary. Conclusively, the order of integration from the table above shows that all the variables except **LRGDP** and **LCBE** are stationary at order 1 i.e., 1st difference I (1). Meanwhile **LRGDP** and **LCBE** are stationary at order 2(i.e., 2nd difference I (2)).

Co-integration Test Results

Having ascertained the order of integration, the next step is to test for the existence of a long run relationship between the variables. The purpose of the co-integration test is to determine whether a group of non-stationary series is co-integrated or not. Therefore, with the manifestation of unit root I(0), I(I) and I(2) by variables of interest, which is a precondition for the existence of a stable linear steady-state relationship. Engle and Granger (1987) pointed out that if the linear combination of non-stationary series exists, then the non-stationary time series are said to be co-integrated. The stationary linear combination is called the co-integrating equation and may be interpreted as a long run equilibrium relationship among the variables; the hypothesis to be used here is:

H_0: There is no long-run relationship: H_1: There is a long-run relationship. This is evaluated at 5% significant level.

Decision rule: Reject H_0 if the ADF-Statistics is greater than the critical values at 5% level of significance and accept if otherwise. The Engel Granger Cointegration test is used to check for existence of long-run equilibrium of the variable(s). Here, residuals are generated after a long-run estimation of the variables, and unit root test is run on the residual at level using ADF T-statistic and at levels.

TABLE 4.2.2: Enger Granger Co-Integration Test Results

Variables	ADF test statistic	5% Critical value	Order of integration	Decision
Residual	-3.975144	-1.953381	I(0)	Stationary

Source: Author's Computation from E-views 10

The result presented in the table 4.2.2 implies a long run equilibrium relationship exist among the economic variables at 5% level of significance. The result showed that the stability of real gross domestic product, exchange rate, unemployment rate, gross fixed capital formation as a percentage of GDP, inflation rate and interest rate will be a long-time determinant of (CBE) Commercial bank loans to SMEs in Nigeria.

Presentation of Regression Result for Model

Short-run Regression Result

By this token, interest is fundamentally (and to some extent solely) in the error correction coefficient ϕ, which measures the speed at which equilibrium is restored, and corrects discrepancies in the model. This coefficient (of the error term lagged (1)) is thus, expected to be negative and significant in order for the previous period disequilibrium of the system to be in fact adjusted.

Table 4.3.1 Error Correction Model (ECM) Regression Result

Dependent Variable: LCBE

Variable	Coefficient	Std. Error	T-Statistic	P-Value
C	-0.027082	0.136859	-0.197887	0.8452
D(LRGDP,2)	-6.515831	5.464263	-1.192445	0.2478
D(INF)	-0.013155	0.010727	-1.226334	0.2351
D(EXCH)	0.000463	0.005694	0.081245	0.9361
D(INTR)	0.094103	0.037502	2.509259	0.0213
D(UNEM)	0.016249	0.028932	0.561630	0.5809
D(GFCFP)	-0.037900	0.053714	-0.705585	0.4890
ECM(-1)	-0.947215	0.347148	-2.728560	0.0133

Hint: The Standard errors are HAC

Source: Author's Computation from E-views 10

The coefficient of the error correction term lagged (1) is negative as expected (-0.947215); and being statistically significant at 5% level of significance, it suggests that the short run disequilibrium is actually corrected. Specifically, only about 94.7% percent of the discrepancy between long-term and short-term LCBE is corrected within a year. Furthermore, since the coefficient value is -0.947215**,** it means that 94.7% of the error in the model is corrected for every year meaning that it will take a year and 1 months for the short run error (disequilibrium) to be corrected in the long run.

Long Run Model Regression Result for the Model

$$\boldsymbol{LCbe_t} = \alpha_0 + \beta_1 Exch_t + \beta_2 Inf_t + \beta_3 Intr_t + \beta_4 LRGdp_t + \beta_5 Unem_t + \beta_6 Gfcfp_t + \mu_t$$

Table 4.3.2: OLS Regression Result for the Model

Dependent Variable: LCBE

VARIABLE	COEFFICIENT	STD. ERROR	T-STATISTIC	P-VALUE
C	129.0957	21.03545	6.137055	0.0000
EXCH	0.006862	0.002479	2.767863	0.0112
GFCFP	-0.111126	0.024510	-4.533911	0.0002
INF	-0.007820	0.006100	-1.281918	0.2132
INTR	0.012784	0.034697	0.368446	0.7161
LRGDP	-4.451562	0.797309	-5.583234	0.0000
UNEM	0.000775	0.031755	0.024412	0.9807

R^2 = 0.637524; Adj. R^2 = 0.538667; F-statistic = 6.448951; Prob(F-statistic) = 0.000494 D-W Stat. = 1.483788

Source: Author's Computation from E-views 10

From the regression result obtained as presented in table 4.3.2, the coefficient of the constant term (i.e. the intercept term) is 129.0957. This represents the Commercial Bank Loans to SMEs that is independent of the regressors. Put simply, if the regressors are held constant (fixed), LCBE will increase by **129.0957** units. But this has no relevant economic implication since in fact, the independent variables cannot take zero values in reality.

Exchange Rate: The coefficient of Exchange Rate is 0.006862 suggesting that Exchange Rate has a positive relationship with Commercial Bank Loans to SMEs. This coefficient, as evident from the result, is also statistically significant. Therefore, holding other variables constant, a one percent increase in the Exchange Rate leads to about 0.6862% increase in Commercial Bank Loans to SMEs in the long run, and increases SME funding by the same amount. This result conforms to apriori expectation as it's premised that an increase in Exchange rate (appreciation of value) would connote an increase in the quantity of funds available to SMEs.

Gross Fixed Capital Formation as Percentage of GDP: From the regression result above, the coefficient of GFCFPis -0.111126**.** The statistically significant coefficient at 5% level of significance shows a negative relationship between Gross Fixed Capital Formation as Percentage of GDP and Commercial Bank Loans to SMEs. Thus, all other variables held constant, on average a one percent increase in the Gross Fixed Capital Formation as Percentage of GDP leads to about 11.1% decrease in Commercial Bank Loans to SMEs in the long run, and decreases SME funding by the same amount. Interestingly, this does not conform to apriori expectation as an increase in the Gross Fixed Capital Formation as Percentage of GDP would connote an increase in infrastructure which would support SMEs operations and various economic activities. This would consequently lead to an increase in SME funding as potential investment opportunities would be explored.

Inflation Rate: The coefficient of INF is -0.007820, implying a negative relationship between Inflation Rate and Commercial Bank Loans to SMEs. So that on the average, and holding other variables constant, a percentage increase in Inflation Rate leads to about 0.78% decrease in Commercial Bank Loans to SMEs in the long-run which decreases SME funding in the economy. Although this effect is statistically insignificant at 5% level of significance, it still does not conform to apriori expectation of the study as an increase in Inflation rate would connote an increase in the quantity of funds available to SMEs in future years in an economy in nominal terms.

Interest Rate: From the result above, the coefficient of Interest rate is **0**.012784. This implies that there exists a positive

relationship between Commercial Bank Loans to SMEs and Interest rate. Hence, a percentage increase in the Interest rate will cause Commercial Bank Loans to SMEs to increase by 1.27% and thus increases SME funding. This effect is statistically insignificant at 5% level of significance and does not conform to apriori expectation.

Log Real Gross Domestic Product: The coefficient of LRGDP from the result above is -4.451562. This value implies the existence of negative relationship between Commercial Bank Loans to SME and the Real Gross Domestic Product which is statistically significant at 5% level of significance. This shows that a percentage increase in the Real Gross Domestic Product will cause a significant decrease in the Commercial Bank Loans to SMEs by 4.451562 units. This does not conform to economic theory. This variable was used to proxy economic growth and productivity in Nigeria and its should rationally affect Commercial Bank Loans to SMEs positively and increase SME funding in the economy.

Unemployment Rate: The coefficient of UNEM from the result above is 0.000775. This value implies the existence of positive relationship between Commercial Bank Loans to SME and the Unemployment Rate which is statistically insignificant at 5% level of significance. This shows that a percentage increase in the Unemployment Rate will cause an insignificant increase in the Commercial Bank Loans to SMEs by 0.078%. This conforms to economic theory.

Granger Causality Test

The Granger test is an estimation to explain the nature of causal relationship between Economic growth and SME Funding as measured by Commercial Bank Loans to SME, Commercial Bank Total Credit to Private Sector and Commercial Bank Loans to SME as a percentage of Total Credit in Nigeria. The result of this causality test as well as the computed f-Statistics, and their respective probabilities, with specific lag period is presented in below. To assess whether the null hypothesis would be accepted or rejected, a significance level of 5 percent was chosen.

Test Hypothesis

$\mathbf{H_0}$: No Granger Causality, $\mathbf{H_1}$: Granger Causality

Decision Rule

Reject H_0: if F-stats p-value < 0.05 Otherwise do not reject.

Table 4.9.1: Pairwise Granger Causality Test for the Model

Null Hypothesis	F-Statistic	P-value
LRGDP does not Granger Cause LCBE	2.68625	0.0904
LCBE does not Granger Cause LRGDP	0.94300	0.4046

Source: Author's computation from E-views 10

Looking at the result in table above the probability value of the first hypothesis is greater than 5% level of significance, hence we do not reject the null hypothesis and conclude that there is no causal relationship between Economic growth and SME Funding. Also from the table, the probability value of the second hypothesis is greater than 0.05 level of significance, thus we fail to reject the null hypothesis and conclude that there is no causal relationship between SME Funding and economic growth. Thus, economic growth does not granger causes SME Funding whereas SME Funding does not granger cause economic growth in Nigeria.

Conclusion and Recommendations

Summary of Research Findings

From the regression result, it could be seen that independent variables such as, Gross fixed capital formation as a percentage of GDP, Exchange rate and Real Gross Domestic Product were significant factors of Commercial Bank Loans to SMEs while Interest rate, Unemployment rate and Inflation rate were not statistically significant.

Also, from the model proxying SME funding with Commercial Bank Total Credit to Private sector (CPS), it could be seen that only independent variables such as, Gross fixed capital formation as a percentage of GDP and Interest rate were significant factors, while Interest rate, Exchange rate, Unemployment rate, Inflation rate and Real Gross Domestic Product were insignificant factors. The coefficient of determination R^2 shows the goodness of fit of the different models. The F-test results show that the overall models are statistically significant. The causality test shows uni-directional causal relationships between the variables, moving from SME funding to Economic growth.

Conclusion

The results of the study revealed that selected macroeconomic factors significantly affect the funds available to Small and Medium Enterprises in Nigeria both in the short run and long run. Rationally, the negative impact of some Macroeconomic factors on SME funding in the long run can be justified by the mismanagement and instability of these Macroeconomic factors over the period under consideration. Consequently, for the appropriate result or impact, to be achieved, government's ability to manage the performance of its Macroeconomic factors or indicators prevalent in an economy is very essential.

Policy Recommendations

The following recommendations are being made to help ameliorate the access of Small and Medium scale enterprises and promote productive utilization of funds paving way for economic growth and development.

1. The policy implication of the findings is that, Gross fixed capital formation as a percentage of GDP plays a very crucial role in the access of finance or funds by the SME and that the creation or provision of enabling infrastructural, legal and institutional environments by the government for SME will improve the access or availability of funds for these enterprises to operate and expand. i.e. the investment in critical framework by government will provide a base for the provision of funds or finance for SMEs in large scale, consequently promoting economic growth.
2. Exchange rate is a key macroeconomic variable that affects the availability of finance to the Small and

Medium Enterprises through the appreciation or depreciation of the value of Naira. Therefore, the government should adopt various polices and measures needed to stabilize the exchange rate in order to improve the access of funds to the Small and Medium scale Enterprises and hence boost economic growth and development in the country.

3. The Interest rate rationally, affects the level of savings and investment and this plays a crucial role on the availability or access to finance by SMEs. Therefore, the Central Bank of Nigeria should come-up with policies that will help to stabilize the interest rate. This will boost the investors' confidence in the economy.

References

1. Achillah, L. (2011). Influence of macroeconomic factors on strategic planning in Commercial banks in Kenya. University of Nairobi MBA project.
2. Ayuba, B. &Zubairu, M. (2015), "Impact of banking sector credit on the growth of small and medium enterprises (SME's) in Nigeria", *Journal of Resources Development and management*, 15(4): 1-9.
3. Balami, G. (2006). Innovation and Growth in Developing Countries, *Journal of Development Economics*, July. 33(3), Cambridge, Mass: MIT Press.
4. Blanchard, O. & Gali, J. (2006), European Unemployment: The Evolution of Facts and Ideas, *JSTOR, Economic Policy*, 45(21) 5-59.
5. Central bank of Nigeria (2008) "Guidelines and Procedures for the establishment of Microfinance banks in Nigeria" CBN.
6. Central Bank of Nigeria, CBN (2016). Annual Report and Statement of Account, Central Bank of Nigeria: Abuja, Nigeria.
7. Central Bank of Nigeria, (2017). Statistical Bulletin, Abuja.
8. Chiyah B. N & Forchu Z. N (2010), The Impact of Microfinance Institutions (MFIs) in the Development of Small and Medium Size Businesses (SMEs) in Cameroon.
9. Dada, R. M. (2014), Commercial Banks' Credit and SMEs Development in Nigeria: An Empirical Review. *International Journal of Research* (IJR) 1(8): 305-320.
10. Dashi, E., Lahaye, E., & Rizvanolli, R. (2013). Trends in International Funding for Financial Inclusion. *Mediterranean Journal of Humanities* 4(1), 126-130.
11. Etuk, R., Etuk,G.& Baghebo,M, M. (2014)Small And Medium Scale Enterprises (SMEs) And Nigeria's Economic Development. *Mediterranean Journal of Social Sciences* 5(7), 656-662.
12. European Commission. (2014). Performance of SMEs in 2013: A fragile and incomplete recovery, Memo, Brussels.
13. Gujarati, D. M.,&Porter, D. (2013). Basic Econometrics (5th ed.) United State of America: Bell and Bain Limited.
14. Hamilton, B, W. (2001) Using Engel's Law to Estimate CPI Bias. *American Economic Review* 91(3*)* 619-630.
15. Iya, I.B. & Aminu, U (2014) An Empirical Analysis of the Determinants of Inflation in Nigeria. *Journal of Economics and Sustainable Development* 5(3): 14-26
16. Jhingan, M. L. (1999). Macroeconomics Theory, 10th ed. India: Stosius Inc.
17. Khariza, M.A(2020). Effect of Macroeconomic Factors on The Small-Medium Enterprises Loans in Indonesia unpublished Master's. Thesis, Faculty of Economics and Business, General Sudirman University, Purwokerto.
18. Kowo, S., Adenuga, O., & Sabitu, O. (2019) The role of SMEs development on poverty alleviation in Nigeria. Insights into Regional Development, *Entrepreneurship and Sustainability Center*, 2019, 1 (3): 214-226.
19. Liu, H., (2004). The relationship between Bankruptcy and Macroeconomic variables. *Journal of Business Management*, 28(5), 372- 384.
20. Madueme, S. I. (2010). Fundamental Rules in Social Science Research Methodology. Nsukka: Jolyn Publishers.
21. Maghyereh, A. (2002). Causal relations among stock prices and macroeconomic variables in the small, open economy of Jordan. *International Journal of Social Science*, (23), 35- 79.
22. Mordi, C.N. (2006). Challenges of exchange rate volatility in economic management in Nigeria. Bullion: Publication of the Central Bank of Nigeria, 30(3): 17-25.
23. Muritala, T. A., Awolaja, A. M. & Bako, Y. A. (2012). Impact of small and medium enterprises on economic growth and development. *American Journal of Business and Management*, 1(1): 18-22.
24. Mlambo S.M., & Oshikoya O. A. (2001 The relationship between Macroeconomic policy variables and Private Investment in Africa. *Sub-Saharan Journal of Globalization and Development Research.* 11(1).
25. National Bureau of Statistics (2010), Report of the National Bureau of Statistics Harmonized Nigeria living Standard Survey (HNLSS).
26. Nwosa, P.I.& Oseni, I.O. (2013) The Impact of Bank Loans to SMEs on Manufacturing output in Nigeria. *Journal of Social and Development Sciences*, 4(5), 212-217.
27. Obadan, M.I. (2006). Foreign Exchange Market and the Balance of Payments: Elements, Policies and the Nigerian Experience. Published by Goldmark Press Limited.
28. Offor, S. U. (2012). The impact of small and medium scale industries on the economic growth of Nigeria (1986 - 2010). A project submitted in partial fulfillment of the requirements for the award of bachelor of Science (B.Sc.) Degree in Economics.
29. Oke, M.O. & Aluko, O.A. (2015) Impact of Commercial Banks on Small and Medium scale Enterprise's financing in Nigeria, *Journal of Business and Management* 5(4) 23-26
30. Olalekan, U.A(2010)SMEs and poverty alleviation in Nigeria: Marketing resources and capabilities implications.*New England Journal of Entrepreneurship* 13(2):57-70.
31. Onakoya, A.B, Fasanya, O &Abdulrahman, H. D (2013), Small and Medium Scale Enterprises Financing and

Economic Growth in Nigeria. *European Journal of Business and Management*, 5(4): 130-137.

32. Onuoha, D, O., Ibe, A. & Njoku, U.C., (2015)Analysis of The Gross Domestic Product (G.D.P) of Nigeria:1960-2012. *West African journal of Industrial and Academic Research* 14(1): 25-35.
33. Opafunso, Z. O. & Adepoju, O. O. (2014). The impact of small and medium scale enterprises on economic development of Ekiti State, Nigeria. *Journal of Economics and Sustainable Development*, 5(16): 115-122.
34. Ojo, M. O. (2000). "The Role of the Autonomy of the Central Bank of Nigeria (CBN) In Promoting Macroeconomic Stability". *Central Bank of Nigeria Economic and Financial Review*, 1(38).
35. Oshikoya, T. W. (1994). 'Macroeconomic determinants of domestic private investment in Africa: An empirical analysis'. *Economic Development and Cultural Change* 42(5) 73-80.
36. Osoro,C, & Ogeto,W. (2014) Macro Economic Fluctuations Effects On The Financial Performance Of Listed Manufacturing Firms In Kenya. *The International Journal of Social Sciences* 21(1) 23-45.
37. Otugo, N.E., Edoko, T.D &Ezeanlue,U.S, U.S (2018) Effect of Small and Medium Enterprises on Economic Growth in Nigeria. *Journal of Business Management and Marketing* 1(2) pp. 73-78.
38. Piana, V (2001). Inflation. Economics Web Institute.Bianconeri Press. Italy.
39. Ruffin R.J. (1998): Principles of Macroeconomics. University of Chicago Press, Chicago.
40. Sahay, R et al (2015). Financial inclusion: Can it meet multiple macroeconomic goals? Washington: International Monetary Fund.
41. Samuelson, L. (2005) Economic Theory and experimental economics. *Journal of Economic Literature* 43(1) 65-107.
42. Sanusi, J. (2001). Small and Medium Industries Equity Investment Scheme (SMIEIS). Central Bank of Nigeria Bullion, 25(3):1-2.
43. SMEDAN& NBS (2019) MSME National Survey 2017 report. Nigeria: Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) publication.
44. Vladimir, R. (2010). Macroeconomic determinant of economic growth and world economic- financial crisis.*Journal of Economics and Business Organization*, 17 – 33.
45. World Bank. (2015). *Access to Finance: Measurement, Impact and Policy*. Policy Finance Report. Washington, D.C.