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Deposit Mobilization, Credit Financing and Nigerian Capital Formation

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Abstract
A huge difference between savings and investments shows that there isn't enough financial mediation, especially in developing countries. But it's evident that these countries' real industries need funds to expand. This study investigates the impact of bank deposits and credit financing on capital formation in Nigeria using a time series. The data was extracted from the CBN bulletin and WDI for the period ranging from 1980–2019 (40 years). The effects of total deposit liabilities, total loans and advances to all sectors, credit to the private sector, and total investment on capital formation were investigated using descriptive and inferential statistics, the stationarity test, and the error correction model. Post-estimation tests were also conducted. The results revealed that total deposit liabilities have a significant positive impact on capital formation in Nigeria; total loans and advances to all sectors have a significant positive impact on capital formation in Nigeria; bank credit to the private sector has a significant positive impact on capital formation in Nigeria; and total investment has a significant positive relationship with capital formation in Nigeria. The study recommends that governments should empower banks in their credit allocation decisions, such as by loosening rules that put credit ceilings on banks, thereby reducing lending volume. Additionally, banks should ensure that any credit extended to the private sector is used to finance more productive investments and high-yielding ventures. Banks could accomplish this by closely monitoring the use of investment-related credit. All interest rates should be set by the market so that the banking sector can get more deposits and use money more efficiently.

Keywords: *capital formation, total deposit liabilities, total loan and advances to all sectors, credit to private sector*
JEL Classification: *E22, G21, G30*

Introduction

Deposit mobilization is a critical banking function throughout the world. It accounts for a sizable portion of the bank's funds, and scholars such as (Jacob & Innocent, 2019; Ünvan & Yakubu, 2020) have established that it is an essential component of a bank's proper operation. Mobilizing deposits is crucial to providing adequate service to a diverse range of sectors of the economy. On the other hand, banks' ability to encourage growth and economic development is contingent upon the financial system's overall health, solidity, and stability (Duguma & Han, 2018). The banking industry's activities, such as deposit mobilization and credit creation, connect bank deposits, bank credit financing, and capital development. However, in the public domain, it has been stated that banks have not operated efficiently enough to stimulate capital formation

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and maintain a stable financial system (Venkati, 2016). Deposit money banks accept deposits, lend money, and keep assets, as well as earn revenue through lending activities. Deposit money banks can facilitate investment by supplying the required financial resources through deposits (Akujuobi & Nwezeaku, 2015).

Banks boost investment by finding and supporting viable business opportunities, mobilizing idle funds, increasing trade, offering risk-hedging mechanisms, and facilitating the exchange of goods and services. Lending is a vital function of banks in the economy (Odufuye, 2017). Bank credit strengthens productive assets by encouraging investment in high-growth areas such as agriculture, education, and health care, all of which contribute to the expansion of the economy (Anthony, 2012). As a result, bank lending stimulates investment, which in turn accelerates economic growth. According to Adewole, Akinmulegun, Akinde, and Popoola (2018), finance is a vital component of investment and economic activity. Oluitan (2012) posits that early economists showed the important role that bank credit plays in encouraging investment by bringing together funds and putting them to good use in the investment sector of the economy, which leads to growth and development.

The economy must either save enough money or borrow from outside to finance the necessary investments for economic growth. If, on the other hand, it is financed externally, it may become unsustainable, threatening policy sovereignty. Additionally, it may result in the accumulation of unsustainable debt and foreign exchange risk. Domestic saving, as a result, is critical for a country's capital formation, as it provides the domestic resources necessary to support the country's investment effort. Banks played a significant role in every economy, with the primary responsibility of financial intermediation, which enabled all economic agents to access funds. Every nation's financial system bears a direct relationship to the size of its economy Borio (2014). A developing economy must entrust the financial sector with increased duties in order to raise the necessary capital to facilitate production and produce income and jobs. In contrast, an economy that does not see sustained growth is likely to have a sluggish financial sector, as there did not appear to be any incentives for investment. During the growth process, the financial system gives savers a variety of portfolio options and gives investors different kinds of instruments.

Research Problem

The absence of efficient financial intermediation, particularly in developing nations, is exemplified by a huge disparity between savings and investment. However, it is self-evident that these countries' real industry

requires investment. This was previously handled for capital acquisition by the establishment of development financial institutions and other similar vehicles that provided credit at below-market rates (Okaro, 2016). According to Angus (2015), Africa has a savings and investment deficit. As a result, countries have had difficulty financing growth-related projects from domestic savings and have had to rely on foreign financing, which can significantly raise debt load and is not a long-term answer (Edward, 2013). According to a UNCTAD study published in 2017, banks' engagement in deposit mobilization and domestic investment finance in developing countries remained inefficient.

The lack of savings produced by low income and excessive consumption has limited banks' ability to manufacture money through intermediation and contributed to the country's shortage of investible funds. Firms suffer considerably due to a lack of funds to expand and run their company. Banks cannot attract sufficient deposits from the public due to a lack of funds to invest in financial institution assets. This stifles financial innovation and worsens the wealth disparity. Insufficient capital for corporate operations reduces deposit mobilization and credit generation in the financial system. Firms become illiquid due to a lack of investible funds, making it harder to buy new technologies and expand. Banks thrive on their ability to generate money through global lending activities. Because commercial banks rely on depositors' funds for liquidity, there are certain links between deposit mobilization and consumer credit. To attain self-sufficiency, domestic deposit mobilization mechanisms must be strengthened. Large sums of money are reportedly hidden under pillows and in bamboos in rural areas, unaffected by the financial system (Thangam & Ganapathy, 2017). To optimize and preserve their portfolios, commercial banks should broaden their means of approaching and mobilizing unbanked people's large deposits. The banking system facilitates the economy's growth. This role supports capital formation, enhancing the economy's output potential. Neither bank deposits nor other banking industry activity like deposit mobilization or loan production have received significant attention.

Studies like Ethopia and Rwanda may have overlooked structural changes such as seasonal cycles or long-term trends. Previous research has long demonstrated a beneficial link between deposit mobilization, credit financing, and capital development. Different countries' capital accumulation and creation performance depends on commercial bank deposit liabilities, credit financing, and other factors. The absence of these crucial variables, which account for country-specific differences between growth models, may have induced bias and inconclusiveness in the study. To remedy this research vacuum, this paper

examines the long-run connection between deposit mobilization, credit financing, and capital accumulation in Nigeria.

Research Objectives

The aim of this paper is to establish the nexus between bank deposits, credit financing and capital formation in Nigeria using a time series. The specific objectives are to;

i. Determine the effect of deposit liabilities on Nigeria capital formation.
ii. Investigate the impact of credit to private sector on Nigeria capital formation.
iii. Unravel the effect of bank investment on Nigeria capital formation.
iv. Examine the effect of commercial bank loan on Nigeria capital formation.

Literature Review

Mobilisation of deposits is an essential element of banking. The primary function of the banking sector has traditionally been to mobilise savings through collecting deposits. Mobilisation of deposits is important in improving the capacity of a bank to serve effectively. Mobilisation of deposits is essential for the development of all economic sectors (Shettar, 2014). The mobilisation of deposits according to Islam, Ali and Wafik (2019) is the collection by the financial institution of cash or money from the public by means of its current accounting, savings, and fixed amounts and other specialised schemes. Deposits are generally considered a low-cost working capital which may contribute to the long term sustainability and profitability of the institutions accepting deposits (Tuyishime, Memba & Mbera, 2015).

According to Richard, Florence and Zenon (2015), mobilising deposits is the main function of the financial institution Mobilisation of deposits is the process of transferring money from surplus to deficit economists and has an effect on economic development. Deposit mobilisation is a banking industry programme used to entice customers to deposit more cash into the bank and to distribute more loans and generate higher incomes by the bank. Moreover, the more loans banks offer, the more profit they get. However, the efficiency of deposit mobilisation depends on the development of the financial sector and on the strategic strategies implemented by banks (Richard et al, 2015).

According to Richard et al (2015) banks should offer different types of deposit plans that entice consumers in order to mobilise adequate deposits. Normally, consumers have different requirements and wish to create

differences between their gender, age, occupation, income level, kind of need, tenure, size of the company and so many other variables while depositing their money with banks. Banks should thus be more appealing and strategic in absorbing these deposits (Hemachandra, 2009).

Banks are often regarded as oligopolistic organisations with significant interdependence and economic competition. In order for banks to stay competitive, the mobilisation methods of traditional and modern deposits should thus be replaced by current technology and different characteristics. These contemporary filing mobilization schemes address a broad range of needs of the public and often utilise banks to boost deposit mobilization in today's banking market using a variety of strategic advertising tactics. Depositors benefit from a variety of benefits and incentives, and banks provide service 24 hours a day, seven days a week, including new features such as mobile banking, internet banking, and door banking (Hemachandra, 2009).

Deposit money institutions lend money to the economy in the form of bank credit. An important theoretical framework centered on the importance of bank loans and how they contribute to economic growth has been intensively examined by finance academics. In a developing country like Nigeria, the banking system is crucial to successful and efficient financial intermediation. Based on the concept that deposit money banks may mobilize savings from the economy's surplus units and allocate them to the economy's production shortfall, this technique is a crucial driver of economic growth and development. The gap between the borrower and the lender is covered by bank credit because of its function in the economy's money supply (Amaefule, Okuneye, & Ogunmuyiwa, 2017).

It is crucial to note that a bank's ability to lend credit to a particular sector of the economy has an impact on the degree of productive activity, which in turn influences growth and development as measured by the growth rate of real GDP. An adequate supply of industrial loans to business concerns is important for the growth and development of firms of all sizes in Nigeria (Ogunmuyiwa et al., 2017). Akujuobi and Nwezeaku (2015) expressly stated that measuring the level to which bank lending has benefited human development and reduced unemployment and poverty is of essential importance.

Empirical Review

On the influence of deposit-money bank on Nigerian economic development, Adesola & Ewa (2020). The study looked into the impact of aggregate bank credits, deposits, and interest rate spreads on Nigerian economic development. From 1984 through 2017, the CBN Statistical Bulletin collected time series data via desk surveys. The data were analyzed using descriptive statistics, Dickey-Fuller unit root test, correlation matrix, and ARDL model. The influence of aggregate bank loans on Nigerian economic development is insignificant, according to research. They found little short- and long-term effects of aggregate bank deposits and spread interest rates on Nigerian economic growth.

In this study, Jacob and Innocent (2019) examines the impact of commercial banks' deposit mobilisation and loan financing on capital in Nigeria. Gross fixed capital creation was utilised as a proxy for dependent variable, while credit to private sectors, lending rate and total deposit liabilities were employed as proxies for independent variables. The research used quarterly data from Q1 1980 through Q4 2015, 48 observations. Data were analysed using multiple regression methods. The research showed that (LRN and TDL) positively influence Nigeria's GFCF whereas private-sector credit has an adverse connection with GDP.

Orok, Okoi, and Essien (2017) examine the impact of Nigeria's inflation rate on bank deposit mobilisation. The ex post analysis uses secondary data from 1994-2014 from the CBN statistics bulletin, Nigerian research libraries, textbooks, journals, and reports. This study's sample comprises deposit money banks in Nigeria from 1994 to 2014. The degree of correlation between variables was assessed using multi-regression Ordinary Least Square (OLS) statistical approach. The findings reveal that interest rates have a big and favorable influence on savings and time deposits, and that demand, savings and time deposits are strongly linked to inflation in Nigeria. For example, the Monetary Policy Committee (MPC) of the Central Bank of Nigeria recommends a marginal increase in savings and time deposit interest rates above inflation to attract high deposit mobilisation, and enhanced trade activity to grow the economy's money supply.

Muluneh (2015) investigated the role of bank deposit mobilisation and loan funding in Ethiopia's banking Industry. The study used an OLS model to analyze 21-year annual data from 1994 to 2014. The research used GFCF as a dependent variable, with BC, BD, and BI as independent variables and real interest rate (NS) as a control variable. The coefficients of variables for bank deposit, bank credit, and national saving

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are statistically significant in Ethiopia. However, due to the small coefficients of variables, bank investment and real interest rate have little impact on capital creation in Ethiopia.

Okoroafor, David and Eze (2018) investigates the influence on capital building in the Nigerian economy of money deposit banking operations. A model was built to explore the influence of commercial banks on capital creation in Nigeria experimentally. Bank savings (BS), liquidity ratio (LR) and deposit rate were the explanatory factors (DR). (DR).. The variables were all subjected to root test units and were stationary at first difference I(1) except for deposit rate (DR) stationary at "I(0)" level. The ARDL co-integration test and the error correction approach were utilised for determining the long-running and short-run link between the variables since not all variables were stationary at the level. The variables were discovered as co-integrated and the ECM was statistically significant suggesting the short-term mechanism. The results suggested that the link between BS and GFCF was positive but minor. The conclusion and suggestion was to evaluate and upgrade present policies and execution by financial policy makers, managers and implementers of the economics in order to guarantee a continual flow of investment money for continued economic growth.

Akani, Lucky and Anyamaobi (2016) examined the impact on Nigerian capital creation of different bank reforms. Data from the time series have been gathered from the 1980-2014 Central Bank of Nigeria statistics bulletin releases. The study includes Nigerian Capital Formation (CF) as a function of the percentage of gross domestic product credit (BB GDP), the percentages of gross domestic product investments (BI GDP) by banks, the percentage of gross domestic product bank deposits (BD GDP) and the percentage of total bank assets to gross domestic production (BTA GDP) and the premium loan rate (PLR). The research uses the Ordinary Least Square (OLS) method of cointegration, Augmented Dickey Fuller Root Unit, and a Granger Causality Test to investigate the connection between the dependent and the independent variables in one vector error correction model. The research showed that all independent variables had a positive association with the dependent variable except the prime lending rate during the static regression. The Unit Root Test demonstrates that the variables are non-stationary, but stationary. The outcome of the co-integration shows a long-term connection between dependent and independent variables. The Burgler causality test demonstrates a multivariate connection between independent factors and the dependent variable and independent variables, while the result of the vector error correction shows sufficient speed of equilibrium adjustment. The research concludes that the growth of the banking industry has an important

impact on the formation of Nigerian capital. The research proposes further reform of the Nigerian banking system and increasing its operating efficiency to promote the formation of capital in Nigeria.

Ogechi (2018) examines the impact of financial deepening on Nigerian commercial banks' client deposits. Time series data were obtained from the 1981-2017 Central Bank of Nigeria Statistical Bulletin. Total customers' deposit percentage on total assets has been utilised as dependent factors, while the percentages of small cash supplies, wide cash, monetary development, non-bank money, and the gross domestic product credit of the private sector have been used as independent variables. In order to investigate the link between the dependent and the independent variables, multiple regression with ordinary lowest cointegration characteristics were employed to increase the Dickey Fuller unit root test, Granger causality test, and the vector error correction model. Regression results showed that the narrow supply of money and the development of the money market negatively impact the total deposit of commercial banks by the customer, whilst private sector credits, large cash and outside banks have a positive impact on the deposit of commercial banks by the customers in Nigeria. The unit root test indicates that the variables at first difference are stationary; the co-integration test confirms the presence of a long term connection while the causality test revealed no causal relationship. The research indicates that financial deepening impacts the total consumer deposit significantly.

Lucky and Kingsley (2016) studied variables influencing Nigerian capital formation. The goal was to evaluate Jhingan's capital creation ideas in Nigeria. Time series data from the Nigerian Central Bank's Statistical Bulletin (CBN). It included private sector loans (CPS/GDP), GNS/GDP (Gross National Savings), commercial bank loans, exchange rate (EXR), inflation rate (INFR), export indebtedness (EXTD/GDP), public expenses (PEX/GDP), government revenue (GR/GDP), trade conditions (TT/GDP), and operating surplus (OPS/GDP). These tests included cointegration, increased dickey Fuller Unit Root Test, Granger Causality Test, and Vector Error Correction Model. However, the impact on capital formation is negative and insignificant for M2/GDP and GNS/GDP, while it is positive and insignificant for CPS/GDP and OPS/GDP. F-statistics showed 86.0 percent reported variation and 12.38458 probability of 0,000004. The report confirms that the factors have a significant impact on the formation of Nigerian Gross Fixed Capital.

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The most efficient variables influencing the mobilization of deposits were studied by Gunasekara and Kumari (2018), followed by the random sampling technique by 120 account owners chosen as a sample from three practical sample regions. Questionnaires are loaded with main data questions. The analysis of the data was carried out using "descriptive statistics" and "regression analysis." The research shows that the mobility of deposit and deposit rates, security, branch growth, services, technology and awareness have a substantial and beneficial link. In addition, the connections between living space and deposit numbers and demographic factors such as gender, employment, education level and income have a substantial impact on deposit mobilization.

Methodology

The study adopted an ex-post facto design. Ex post facto research can be thought of as reverse experimental research. The macroeconomic dataset was collected from World Bank development indicators (WDI), International Monetary Fund (IMF), CBN statistical bulletin. The dataset spannned 38 years period from 1980-2019. A single model is formulated and specified for the study, which includes a dependent, 4 independent, 5 control variable and a stochastic error term that takes care of any variable not included or considered in the model.

GFCF= F (CPS, CBL, DEL, BINV, GEX, MS, ITR, IFR EXR)

$LogGFCFt = \beta_0 + \beta_1 LogCPS_t + \beta_2 LogCBL_t + \beta_3 LogDEL_t + \beta_4 LogBINV_t + \beta_5 LogGEX_t + \beta_6 LogMS_t + \beta_7 LogITR_t + \beta_8 LogIFR_t + \beta_9 LogEXR_t + ECM_{t-1} + \varepsilon$

Where:

GFCF= Gross Fixed Capital Formation

β_0= Constant/ intercept

CPS = Credit to private sector

CBL = Commercial bank Loan

DEL = Deposit Liabilities

BINV = Bank investment

GEX = Government expenditure

MS = Money Supply

IFR= Inflation Rate

ITR = Interest rate for the given year

EXR= Exchange Rate

ECM = Error correction Model

β_n = Beta (Regression) score for the given year

ε = Error term

A priori Expectation

$\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 > 0$, $\beta_5 > 0$, $\beta_6 > 0$, $\beta_7 < 0$, $\beta_8 < 0$, $\beta_9 < 0$,

Method and Procedure for Data Analysis

To rule out spurious regression, the series was tested for stationarity. The test was conducted using the ADF unit root test. A table was created to display the results and order of the integrations. The test was conducted at various levels of 1%, 5%, and 10% critical values to ascertain the level at which the variable is stationary. Johansen cointegration test was also conducted to confirm the existence of long run relationship among the variables. The error correction model (ECM) was used to estimate the short run and long run OLS.

Results and Discussions

Descriptive Analysis

The result is presented in Table 1

Table 1: Descriptive statistics of the Study variables

	GFCF	DEL	CPS	CBL	BINV	GEX	MS	ITR	IFR	EXR
Mean	8581.25	5141.0	5340.5	2125.8	505.28	1428.3	6585.1	0.30	19.14	89.49
Median	8171.58	702.10	530.37	508.30	7.94	461.60	878.45	4.31	12.55	102.10
Max	1581.33	23758.	24922.	10005.	2574.6	6997.3	34251.70	18.18	72.83	306.08
Mini	567.29	10.67	8.57	8.58	0.25	4.75	14.47	5.86	5.38	0.61
Std. D	2021.26	7385.5	7994.5	2957.3	804.71	1842.5	9911.37	14.60	17.06	86.19
Skewnes	1.360	1.201	1.26	1.41	1.34	1.29	1.43	-2.63	1.78	0.77
Kurtosis	5.65	2.97	3.05	3.68	3.36	3.81	3.78	12.25	4.99	2.98
JB	23.46	9.38	10.38	13.69	11.91	12.02	14.42	184.2	27.16	3.92
Prob	0.13	0.19	0.08	0.07	0.01	0.02	0.03	0.02	0.01	0.14
Obs	39	39	39	39	39	39	39	39	39	39

The descriptive table above shows that gross fixed capital formation (GFCF) had an average of 8581.25, a median of 8171.58, ranging from 567.29 to 1581.33 with a standard deviation of 2021.26, with the kurtosis value of 5.65 which implies that gross fixed capital formation (GFCF) is leptokurtic because the value is greater than three.

Deposit liabilities, (DEL) had an average of 5141.0, a median of 702.10, ranging from 10.67 to 23758 with a standard deviation of 7385.5, with the kurtosis value of 2.97 which implies that deposit liabilities, (DEL) is platykurtic because the value is less than three.

Credit to private sector (CPS) had an average of 5340.5, a median of 530.37, ranging from 8.57to 24922 with a standard deviation of 7385.5, with the kurtosis value of 3.05 which implies that credit to privsector (CPS) is leptokurtic because the value is greater than three.

Commercial bank loan (CBL) had an average of 2125.8, a median of 508.30, ranging from 8.58 to 10005 with a standard deviation of 2957.3, with the kurtosis value of 1.41 which implies that commercial bank loan (CBL) is platykurtic because the value is less than three.

Bank investment (BINV) had an average of 505.28, a median of 7.94, ranging from 0.25 to 2574.6 with a standard deviation of 804.71, with the kurtosis value of 3.36 which implies that Bank investment (BINV) is leptokurtic because the value is greater than three.

Government expenditure (GEX) had an average of 1428., a median of 461.60, ranging from 4.75 to 6997.3 with a standard deviation of 1842.5, with the kurtosis value of 3.81 which implies that Government expenditure (GEX) is leptokurtic because the value is greater than three.

Money supply (MS) had an average of 6585.1, a median of 878.45, ranging from 14.47 to 34251.70 with a standard deviation of 9911.37, with the kurtosis value of 3.78 which implies that Money supply (MS) is leptokurtic because the value is greater than three.

Interest rate (ITR) had an average of 0.30, a median of 4.31, ranging from 5.86 to 18.18 with a standard deviation of 14.60, with the kurtosis value of 12.25 which implies that Interest rate (ITR) is leptokurtic because the value is greater than three.

Inflation rate (IFR) had an average of 19.14, a median of 12.55, ranging from 5.38 to 72.83 with a standard deviation of 17.06, with the kurtosis value of 4.99 which implies that Inflation rate (IFR) is leptokurtic because the value is greater than three.

Exchange rate (EXR) had an average of 89.49, a median of 102.10, ranging from 0.61 to 306.08 with a standard deviation of 86.19, with the kurtosis value of 2.98 which implies that Inflation rate (IFR) is platykurtic because the value is less than three.

Empirical Analysis

Unit Root Test

The Augmented Dickey Fuller (ADF) unit root test was applied for this purpose. The outcome of the ADF unit root test is shown in Table below.

Table 2: Augmented Dickey-Fuller Unit root Stationarity Test

Variable	Test at Levels			Test at 1st difference			Inference
	ADF statistic	t-statistic	Prob.*	ADF statistic	t-statistic	Prob.*	
GFCF	-2.052179	-2.945842	0.2644	-4.850754	-2.945842	0.0004	I(1)
CPS	-0.783378	-2.941145	0.8124	-4.188023	-2.943427	0.0022	I(1)
CBL	-1.469541	-2.941145	0.5380	-4.833307	-2.943427	0.0004	I(1)
DEL	-0.924438	-2.943427	0.7692	-3.670680	-2.943427	0.0088	I(1)
BINV	-0.627951	-2.954021	0.8509	-6.464131	-2.943427	0.0000	I(1)
GEX	-1.535651	-2.943427	0.5047	-8.208973	-2.943427	0.0000	I(1)
MS	-0.648370	-2.941145	0.8475	-4.108938	-2.943427	0.0028	I(1)
ITR	-1.021398	-2.941145	0.7358	-6.281700	-2.943427	0.0000	I(1)
IFR	-2.915636	-2.941145	0.0529	-5.672642	-2.943427	0.0000	I(1)
EXR	-0.508733	-2.948404	0.8777	-4.377405	-2.948404	0.0014	I(1)

Table 2 presents the results of the unit root test performed using the Augmented Dickey Fuller for the variables at their level and first difference. The result shows all the variables are non-stationary at 5% significance level. At first difference the variables became stationary at 5% significance level, hence the null hypothesis is rejected of non-stationarity among the variables.

Analysis of Cointegration

Having established that all our variables are stationary at their first difference with the use of Augmented Dickey-Fuller unit root test, we therefore proceed further to check for long run relationship among our variables adopting the Johansen co-integration test which is deemed more appropriate for this study because of its multivariate nature as well as the likelihood of more than one co-integrating relationship.

Table 3: Unrestricted Cointegration Rank Test (Trace)

Series: LGFCF LCPS LCBL LDEP LBINV LGEX LMS ITR IFR EXR				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.968297	444.2776	239.2354	0.0000
At most 1 *	0.861937	316.5777	197.3709	0.0000
At most 2 *	0.816946	243.3159	159.5297	0.0000
At most 3 *	0.742197	180.4909	125.6154	0.0000
At most 4 *	0.656761	130.3352	95.75366	0.0000
At most 5 *	0.594251	90.77008	69.81889	0.0005
At most 6 *	0.554194	57.39530	47.85613	0.0049
At most 7	0.343044	27.50404	29.79707	0.0899
At most 8	0.276153	11.95890	15.49471	0.1589
At most 9	3.88E-05	0.001436	3.841466	0.9682

Table 3 presents the results of Johansen co-integration test using the Rank Test (Trace). The result from the trace statistics indicate that there are three co-integrating equations in the model because their corresponding probability is less than 5%. Therefore, we reject the null hypothesis of no co-integrating relations among the variables.

Table 4: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		**Max-Eigen**	**0.05**	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.968297	127.6999	64.50472	0.0000
At most 1 *	0.861937	73.26181	58.43354	0.0010
At most 2 *	0.816946	62.82501	52.36261	0.0031
At most 3 *	0.742197	50.15575	46.23142	0.0181
At most 4	0.656761	39.56509	40.07757	0.0570
At most 5	0.594251	33.37479	33.87687	0.0573
At most 6 *	0.554194	29.89126	27.58434	0.0248
At most 7	0.343044	15.54514	21.13162	0.2525
At most 8	0.276153	11.95746	14.26460	0.1123
At most 9	3.88E-05	0.001436	3.841466	0.9682

Tables 4 presents the result of Johansen co-integration test using the Maximum Eigenvalue. The result from the maximum eigenvalue statistics indicate that there is one co-integrating equations because its corresponding probability is less than 5%. Therefore, we reject the null hypothesis of no co-integrating relations among the variables.

Error Correction Model

The result of the error correction term is utilized to determine the model's speed of adjustment from the short run to the long run equilibrium state. The decision-making criterion is that the larger the coefficient of the ECM term, the faster the model adjusts from short to long run.

GFCF= F (CPS, CBL, DEL, BINV, GEX, MS, ITR, IFR EXR)

$$LGFCFt = \beta_0 + \beta_1 CPS_t + \beta_2 LCBL_t + \beta_3 LDEL_t + \beta_4 LBINV_t + \beta_5 LGEX_t + \beta_6 LMS_t + \beta_7 LITR_t + \beta_8 LIFR_t + \beta_9 LEXR_t + ECM_{t-1} + \varepsilon$$

Where:

GFCF= Gross Fixed Capital Formation

β_0= Constant/ intercept

CPS = Credit to private sector

CBL = Commercial bank Loan

DEL = Deposit Liabilities

BINV = Bank investment

GEX = Government expenditure

MS = Money Supply

IFR= Inflation Rate

ITRn = Interest rate for the given year

EXR= Exchange Rate

ECM = Error correction Model

β_n = Beta (Regression) score for the given year

ε = Error term

The coefficient of the error correction term (ECM) in the result provided in Table 5 above is 0.641169, which is statistically significant at the 1% level. The absolute value of this result is that the model's speed of adjustment from short to long run is approximately 64 percent slower. Additionally, the finding demonstrates that the error correction term satisfies the a priori criterion that its coefficient has a negative value. This implies that the dependent variable (GFCF) changes in response to the cointegrating error of the estimated model's selected variables. Thus, the model's speed of adjustment indicates that the error correction model's (ECM) coefficient will correct the disequilibrium at a rate of 64 percent. Additionally, the adjusted coefficient of determination (R-squared=0.712120) indicates that approximately 71.2 percent of systematic variations in gross fixed capital formation (GCFC) are explained jointly by deposit liabilities

(DEL), credit to the private sector (CPS), commercial bank loans (CBL), total investment (BINV), government expenditure (GEX), money supply (MS), inflation rate (IFR), interest rate (ITR), and exchange rate (EXR).

Table 5: Error Correction Model

Dependent Variable: LGFCF				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
C	8.288357	1.783999	4.645943	0.0001
D(LCPS)	0.514927	0.193966	2.654731	0.0091
D(LDEL)	0.629832	0.240846	2.615084	0.0145
D(LCBL)	0.193649	0.065021	2.978256	0.0002
D(LBINV)	0.109762	0.044644	2.458627	0.0282
D(LMS)	0.331643	0.279751	1.185492	0.2479
D(LGEX)	0.056437	0.078025	0.723322	0.4768
D(IFR)	-0.000262	0.000700	-0.373981	0.7118
D(ITR)	-0.005591	0.004838	-1.155727	0.2597
D(EXR)	-0.000370	0.000247	-1.499775	0.1473
ECM(-1)	-0.641169	0.078468	-8.171129	0.0000
R-squared	0.816076	Mean dependent var		12.91041
Adjusted R-squared	0.712120	S.D. dependent var		0.078619
S.E. of regression	0.042183	Akaike info criterion		-3.212272
Sum squared resid	0.040926	Schwarz criterion		-2.602735
Log likelihood	73.42703	Hannan-Quinn criter.		-2.997382
F-statistic	7.850147	Durbin-Watson stat		2.427923
Prob(F-statistic)	0.000011			

Source: EViews 10

Test for Heteroskedasticity in Residuals

Furthermore, the study used a heteroskedasticity test to determine whether the conditional variances of all regression residuals were equal (homoscedastic) or dissimilar (heteroscedastic). Table 6 summarizes the findings.

Table 6 Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.313221	Prob. F(9,27)	0.9637
Obs*R-squared	3.497853	Prob. Chi-Square(9)	0.9413
Scaled explained SS	2.030026	Prob. Chi-Square(9)	0.9910

From the Breusch-Pagan-Godfrey table above, the p-value of F-statistic is 0.9637 and p-value of the χ^2 ('LM') is 0.9413 respectively, which are both greater than 0.05. Both the F- and χ^2 ('LM') versions of the test statistic give the same conclusion that there is no evidence for the presence of heteroscedasticity since the p-values are considerably more than 0.05.

The sample consisted of 34 out of the 45 commercial state-owned enterprises (CSOEs) that were initially targeted in Uganda observed from 2009 to 2018. The resultant response rate was 75.5 percent which according to Lindemann (2019) is high enough to enhance the representation of the results in the panel and social surveys.

Conclusions and Recommendations

This study examines the effect of bank deposit and bank credit on capital formation in Nigeria. To achieve this, a model was formulated to empirically analyse the impact of the effect of bank deposit and bank credit on capital formation in Nigeria using OLS technique with statistical test of significance. deposit liabilities, credit to private sector, commercial bank loan, total investment, government expenditure, money supply, inflation rate, interest rate and exchange rate were used to proxy the explanatory variable while gross fixed capital formation was used to proxy the dependent variable. The finding shows that total deposit liabilities have significant effect on capital formation in Nigeria, the regression estimates further reveals that total deposit liabilities is positively associated with capital formation in Nigeria. The implication of this finding is that an increase in total deposit liabilities will propel a rise in capital formation in Nigeria. Put differently, if the total deposit liabilities are channeled judiciously to productive use, it is capable of enhancing and increasing capital formation.

The finding also shows that total loan and advances to all sectors have significant impact on capital formation in Nigeria, the regression estimates further reveals that DMBs total loan and advances to all sectors is positively associated with capital formation in Nigeria. The implication of this finding is that an increase in total loan and advances to all sectors will cause a rise in capital formation in Nigeria. Put differently, if the total loan and advances to all sectors are channeled effectively and efficiently use, it is capable of enhancing and increasing capital formation.

Furthermore, the finding shows that bank credit to private sector has significant effect on capital formation in Nigeria, the regression estimates further reveals that bank credit to private sector is positively associated with capital formation in Nigeria. The implication of this finding is that an increase in bank credit to private sector will cause a rise in capital formation in Nigeria. Put differently, if the bank credit to private sector are utilized effectively and efficiently use, it is capable of enhancing and increasing capital formation.

Lastly, the finding shows that there is significant relationship between total investment and capital formation in Nigeria, the regression estimates further reveals that total investment is positively associated with capital formation in Nigeria. The implication of this finding is that an increase in total investment will cause a rise in capital formation in Nigeria. Put differently, total investment is capable of increasing capital formation provided the bank make a right investment decision. As a result of the study's results showing banks' credit has a substantial effect on capital formation, the researcher recommends that governments empower banks in their credit allocation decisions, such as by loosening rules that put credit ceilings on banks, hence reducing lending volume. Additionally, banks should ensure that any credit extended to the private sector is used to finance more productive investments and high-yielding ventures. Banks could accomplish this by closely monitoring the use of investment-related credit. To improve the banking sector's ability to mobilize deposits and deploy funds efficiently, all interest rates should be established by the market.

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