FINANCIAL SYSTEM EFFICIENCY, MONEY SUPPLY VELOCITY AND DOMESTIC INVESTMENT IN NIGERIA

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ABSTRACT
Theoretical predictions indicate a bio-directional nexus between financial system efficiency and real economic growth with implications for the value of investment in the productive sector of the economy. Against this backdrop, the paper examined the impact of financial system efficiency and money supply velocity on domestic investment in Nigeria. The study strives to specifically evaluate the impact of financial system efficiency, money supply velocity, real interest rate, net interest margin and inflation rate on gross domestic investment. Secondary data collated from the CBN statistical bulletin and the World Bank indicator for a period of 32 years (1990 to 2021) was used for the study. The ADF unit root test, Johansen cointegration test and the ordinary least square (OLS) econometric technique were used for the empirical investigation. The results from the empirical analysis reveal that financial system efficiency have a positive but insignificant impact on domestic investment in Nigeria. While money supply velocity and net interest margin had significant positive impact on domestic investment in Nigeria. On the other hand, real interest rate and inflation rate showed a negative impact on domestic investment and was found to be insignificant. The study recommends among others that the monetary authorities should revisit their structural policy frameworks that promote competition, innovation and efficiency of the financial system and overcome the problem of low investments, by maintaining a stable growth of the real money supply.
Keywords: Domestic investment, financial system efficiency, financial liberalization
JEL:

INTRODUCTION
The central responsibility of a country's financial system is to transfer surplus money from savers to borrowers, who utilize the funds for the production of goods and services, as well as investment in new equipment and other facilities that lead to economic growth. A higher level of investment leads to an improvement in the standard of living for individuals.

A robust financial system ensures that there is enough money available, that financial transactions run smoothly, and that funds can move freely throughout the economy. This system includes financial intermediaries, markets, instruments, regulations, norms, and practices that make it possible for money to flow into investments, the purchase of goods and services, and saving for future consumption opportunities.

According to Peter and Milton's (2006) definition, the financial system is comprised of several components, including markets, institutions, laws, regulations, and techniques. Its purpose is to facilitate the trading of securities like stocks and bonds, determine interest rates, and provide financial services internationally. The act of transferring funds from surplus saving units (savers)

to deficit saving units (borrowers) with the aim of promoting economic growth is known as financial intermediation.

The financial sector includes two main types of funding: direct financing, which takes place in financial markets, and indirect financing, which occurs through financial intermediaries. Both of these types of financing play a critical role in promoting economic growth. Financial intermediaries are important because they can reduce the costs associated with saving and investment decisions, while financial markets help to distribute wealth more efficiently, thereby spurring economic growth in a country (Saqib, 2013). The role of financial intermediaries is to act as an intermediary between parties to facilitate financial transactions. These financial institutions provide funds in the form of loans or mortgages. When transactions take place directly between parties, such as through debt or equity markets, it is known as financial disintermediation. Financial intermediaries include banks, investment banks, credit unions, life insurance companies, brokers, mutual funds, and stock exchanges, among others.

Financial intermediaries carry out four key functions that aid in increasing economic growth. Firstly, it facilitates the transfer of excess funds from surplus units to deficit units. Secondly, it incentivizes the movement of savings by offering attractive and innovative instruments. Thirdly, it reduces the cost of project assessment and controls projects through corporate governance. Finally, financial intermediaries create opportunities for reducing risk management and liquidity level by having strong information through the development of markets and attractive instruments (Ali and Alu, 2013). The relationship between financial intermediation, financial system efficiency, money supply velocity, economic growth, and investment varies among countries due to their diverse economic structures. Efficient financial sector development is particularly critical for developing countries if they are to achieve sustainable long-term economic growth.

Financial intermediaries play a crucial role in the economy by reducing transaction costs, facilitating risk involvement, and addressing the problem of adverse selection and moral hazard. They are essential for financial markets to function and for funds to be efficiently transferred. Without these intermediaries, financial markets would not be able to operate effectively. As a result, small savers and borrowers are able to participate and make contributions to the financial markets, leading to improved economic efficiency. Both theoretical and empirical evidence supports the mobilization of savings through appropriate financial intermediation and the channelling of these funds into investments to promote economic growth and development. For example, Atseye, Nedozi, and Obasam (2019) pointed out that savings from various economic units are pooled together and directed towards investments in order to promote growth and development.

Theoretical and empirical research has shown that there is a connection between savings, facilitated by financial intermediation, and economic growth and investment. Therefore, it is the amount of savings that increases the amount of capital and therefore the value of domestic investment. Additionally, a stable financial system is critical for the allocation of limited resources to improve savings and investment opportunities. However, it is unclear to the researcher to what extent financial system efficiency, as measured by the total deposit in the economy relative to gross domestic product, affects domestic investment. This study aims to examine the impact of financial system efficiency and money supply velocity on domestic investment in Nigeria between 1990

and 2021.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

To determine what constitutes financial system efficiency, one must first establish the nature of banking approaches. Two widely recognized theoretical approaches in banking literature are the production and intermediation approaches. The production approach considers financial institutions as producers of services for account holders, which includes processing documents like loans and transactions on deposit accounts. Conversely, the intermediation approach assumes that banks primarily function as financial intermediaries that acquire funds from savers in exchange for their liabilities and then lend to others for profit-making. This is also referred to as the asset approach, where banks act as intermediaries between savers and borrowers. Berger & Humphrey (2017) contend neither approach is perfect as both fail to fully capture the dual role of financial institutions as providers of transaction/document processing services and financial intermediaries. They suggest that the production approach may be more suitable for evaluating the efficiency of bank branches while the intermediation approach may be better for assessing the efficiency of financial institutions as a whole.

According to Diallo (2018), the efficiency of banks can improve their resilience to shocks and have a positive and significant impact on growth. A financially efficient system can also alleviate credit constraints and help industries that are financially dependent to grow even during times of crisis. Similarly, Waheed&Younus (2010) have found empirical evidence to support the idea that the development of the financial sector is essential for economic growth, and the effectiveness of the financial sector can have a significant effect on a country's long-term economic performance.

According to existing literature, financial system efficiency can be classified in different ways. Yudistira (2004) identifies two main types of financial system efficiency. The first one is referred to as scale efficiency, introduced by Farell (1957), which measures the relationship between a bank's average production cost per unit and its volume. The second type is X-efficiency, introduced by Leibenstein (1966), which represents deviations from the cost-efficient frontier, depicting the lowest production cost for a given level of output. Kablan (2010) defines X-efficiency differently, as a measure of how well management aligns technology, human resource management, and other resources to produce a given level of output. In this study, financial system efficiency is measured as the total credit provided by deposit money banks divided by GDP.

Empirical review

Verma (2007) conducted a study on the internal influence of investment. The study aimed to conduct a unit root test that determined a break in time and used the ARDL (Autoregressive Distributed Lag) approach to analyze the long-term relationship between variables and ECM (error correction mechanism) to analyze the short-term relationship. Each variable was analyzed as dependent, while the others were considered independent to determine their relationship with each other. The findings of the study showed a significant positive correlation between GDP and gross domestic savings with private investment.

Sajid and Sarfraz (2008) investigated the causal relationship between private investment and exchange rate. Their study used the cointegration technique and vector error correction model to examine causality between investment and exchange rate. Their results showed that there is long

run as well as a short run equilibrium relationship between private investment and exchange rate.

Also, Fripong and Marbuah (2010) employed modern time series econometric techniques, the cointegration and error correction techniques using an ARDL model to measure the determinants of domestic investment. Their study revealed in the short-run, public investment, inflation, real interest rate, openness, real exchange rate, and a regime of constitutional rule, are determinants of private investment in Ghana. They noted that in the long-run, private investment is significantly determined by, real output, inflation, external debt, real interest rate, openness and real exchange rate. They suggested a macroeconomic policy regime that will boost private investment.

Karagoz (2010), in his study, aimed to determine the factors that affect private investments in the long-run in Turkey. The study estimated the long-run private investment equation using the bounds test (ARDL) approach to co-integration. Estimated coefficients of their variables showed that in the long-run real GDP, real exchange rate, and ratio of private sector credit to GDP, private external debt, inflation, and trade openness have significant impacts on private investments.

Duruechi and Ojiegbe (2015) examined the determinants of investments in the Nigerian economy through an empirical approach from 1990 to 2013. The data for the study were analyzed using OLS, co—integration, and Granger causality test methods of econometrics. Greene and Villanueva (1990) studied the determinants of private investment in less developing countries for 23 countries between 1975-1987 periods, and found that the real deposit interest rate has a negative impact on domestic investment.

Muhammad and Khan (2013) analyzed the factors that play an important role in determining private investment in Pakistan. The econometric tests undertaken supported the view that private sector output, net capital inflows to the private sector, total sources of funds and past capital stock have all been significant determinants of private investment rates in Turkey. According to their findings, changes in the volume of bank credit also have a positive effect. They suggested that if the sector is squeezed for credit then there will be a reduction in the level of private investment with adverse impacts on the productivity of the private sector. This implies there is a "crowding out" effect indicating that most of the physical and financial resources are utilized by public sector, thereby exerting a negative influence on private investment.

Ayeni (2014), investigated the determinants of private investment in Nigeria. The study used the ARDL (Autoregressive Distributed Lag) Cointegration approach to check the existence of a long-run relationship in Nigeria. The result suggested that aggregate demand condition in the economy (GDP), real interest rate, real exchange rate, inflation rate and credit to private sector have not been able to contribute effectively or boost private investment in Nigeria as they all show signs contrary to expectations. However, the study suggested that the government, while improving the macroeconomic conditions conducive to boost investment, should also create a conducive political environment to boost private sector investment.

Abate (2016), conducted a study with the main objective of investigating and analyzing factors that determine domestic private investment in Ethiopia. They used the framework of VAR and VECM using annual data. Their results showed that public investment, real GDP, exchange rate and credit have positive effect on private investment in the long-run. In the short run, they

identified exchange rate and inflation as having positive and negative effects respectively on private investment. Hence, to promote the performance of private sector in the country, they recommended measures that can improve real income of people and attract private investment.

Bonga and Nyoni (2017) systematically reviewed the determinants of private investment which has been significantly low for the past three decades in Zimbabwe. Their results showed that GDP and public investment are the most powerful factors that affect private investment in Zimbabwe. The study recommended that gross domestic product, public investment, interest rate and other macroeconomic indicators used in the study should be improved upon to have productive effect on the private sector investment.

Eregha (2010) examined variations in interest rate and investment determination in Nigeria and deduced that investment has an indirect relationship with interest rate variation and other variables that he used. Green and Villanueva (1991), estimated the effect of macroeconomic variables and policies including interest rates on private investment on a group of developing countries. Their results showed that private investment-GDP ratio is positively related to real GDP growth level of per capital income and rate of public sector investment, while interest rate, domestic inflation negatively affect private investment ratio.

Soteriou & Zenios (1997) indicates that analyzing banks' efficiency should include branches, service quality, operations, and profitability, simultaneously. The authors develop a framework for combining strategic benchmarking with efficiency benchmarking of the services offered by bank branches. They use 3 DEA models: an operational efficiency model, a quality efficiency model and a profitability efficiency model. Empirical results indicate that superiorinsights can be obtained by analyzing operations, service quality, and profitability simultaneously than the information obtained from benchmarking studies of these 3 dimensions separately.

Berger & Humphrey (2017) documents 130 studies of financial institution efficiency, as applied on 21 countries, from multiple time periods, and from various types of institutions, including banks, credit unions, and insurance companies. Results suggest that progress has been made on efficiency measurement rather than that has been made in explaining the differences in performance (i.e., profitability or efficiency) across institutions. Besides, Athanassopoulos & Giokas (2019) examines 47 branches of the Commercial Bank of Greece and uses the DEA results to implement the proposed changes in the bank performance measurement system.

Katib & Mathews (2000) studied the characteristics of the management structure and technical efficiency of the Malaysian banking sector from 1989 to 1995. The results indicate that technical inefficiency in Malaysian banking is due to scale inefficiency. Besides, banks with more market power (measured by their ratio of deposits to market deposits) tend to exhibit higher technical efficiency.

METHODOLOGY AND DATA
The study adopted the ex-post-facto research design also known as historical research design. This type of research design is usually employed where events have occurred and data are readily available. The study employed the desk survey to gather data from different sites. The researcher collated time series secondary data from the Central Bank of Nigeria statistical bulletin, data were

also gotten from National Bureau of statistics (NBS) and World development indicators.

The theoretical model for the analysis of financial system efficiency, money supply, velocity, and domestic investment is specified as follows:

GDI=F(FSE, MSV, RINR, NIM, INFR)

The econometric form of the model is specified as:

$$GDI = \propto_0 + \propto_1 FSE + \propto_2 MSV + \propto_3 RINT + \propto_4 NIM + \propto_5 + INFR$$

Where: GDI = Gross Domestic Investment; FSE = Financial system Efficiency; MSV = Money Supply Velocity; RINT = Real interest rate; NIM= Net interest margin; INFR = Inflation rate; $\propto_0$= regression constant ; $\propto_1$ - $\propto_5$= coefficient of regression variables or explanatory variables; ε_0= error term

Data were described using descriptive technique as well as multiple regression technique, the study utilized the Augmented–Dickey fuller (ADF) pre-estimation technique in testing for the presence of unit root. Another pre-estimation test conducted was the Johansen co-integration test. The OLS regression technique was conducted to examine the relationships between the variables and post estimation test was further conducted to test for the statistical validity of the model.

DATA ANALYSIS
Table 1 presents the results of the descriptive statistics analysis. The arithmetic average of gross domestic investment (GDI) over the thirty-two year period was found to be 28.8154, which indicates that GDI was positive in Nigeria. The range of GDI was observed to be 38.2827, which is the difference between the maximum and minimum values of the data. The standard deviation of GDI was 11.0699. The minimum value of financial system efficiency (FSE) was 4.9580 in 1990, while the maximum was 19.6260 in 2009, with a mean value and standard deviation of 10.23994 and 3.51215, respectively. Furthermore, the mean value of money supply velocity (MSV) over the same period was 16.59969 with a standard deviation of 8.46000, indicating that MSV was fairly stable and did not deviate too much from the mean. The real interest rate (RINR) had an average of 2.80397 with a standard deviation of 9.9599, while net interest margin (NIM) had an average of 11.73469 with a standard deviation of 4.87431 and a minimum and maximum value of 4.7000 and 23.9990, respectively. Finally, the inflation rate (INFR) had a mean value of 18.7334 with a standard deviation of 3.6100, with the minimum value being 3.61000 in 1990 and the maximum value being 19.62560 in 2009.

Table 1: Result of descriptive statistics

	GDI	FSE	MSV	RINR	NIM	INFR
Mean	28.81542	10.23994	16.59969	2.803974	11.73469	18.73344
Median	27.53981	9.395000	14.60000	5.528430	10.76500	12.41000
Maximum	53.18669	19.62600	24.90000	18.18000	23.99000	76.76000
Minimum	14.90391	4.958000	8.460000	-31.45257	4.700000	3.610000
Std. Dev.	11.06996	3.512155	5.621450	9.959900	4.875431	16.65408
Skewness	0.385654	0.851861	0.136219	-1.508632	0.989988	2.285862
Kurtosis	2.096697	3.473185	1.379251	5.841571	3.459458	7.240578
Jarque-Bera	1.881161	4.168766	3.601399	22.90455	5.508541	51.84422
Probability	0.390401	0.124384	0.165183	0.000011	0.063655	0.000000
Obsrvations	32	32	32	32	32	32

Test of stationarity

In recent years, the unit root test has gained widespread popularity as a means of testing stationarity. The purpose of conducting a unit root test in this study is to confirm that the series being analyzed are stationary and to address the issue of having a regression that doesn't make sense. The augmented Dickey-Fuller (ADF) test was chosen to conduct the unit root test, which involves including the lagged difference terms of the variable being analyzed to account for possible serial correlation in the error terms. The results reported in Table 2 indicate that all the series are I(1) after first differencing. Thus, with this it is appropriate to test for existing of co-integration among gross domestic investment (GDI) and the rest of the variables using the Johansen co-integration test.

Table 2: Augmented-Dickey-Fuller – unit root test

Variables	ADF at Level		ADF at First Difference		Order of integration
	Test Stat	Prob.	Test Stat	Prob.	
GDI	-1.789932	0.0947	-3.341359	0.0220*	I(1)
FSE	-1.636754	0.0448	-3.564334	0.0348*	I(1)
MSV	-3.387036	0.0505	-5.566735	0.0034*	I(1)
RINR	1.342456	0.0754	-4.067659	0.0022*	I(1)
NIM	2.594958	0.3456	-4.930827	0.0005*	I(1)
INFR	2.595328	0.1643	-4.930827	0.0005*	I(1)

Notes: ***indicates significance at the 5% level

Co-integration test

The results of stationarity analysis presented in the Table 2 show that all the modeled variables are integrated of same order. Therefore, the study then applies the Johansen cointegration tests to explore the long-run relationships among the variables. The results for Trace statistic tests are reported in Table 3. The findings of the trace rank tests indicate that, with 95% confidence, there are three cointegration equations present among the variables studied. The results clearly show that the trace tests suggest a minimum of three cointegration vectors, meaning that there are at least three long-term equilibrium relationships between the dependent variable (GDI) and all the independent variables (FSE, MSV, RINR, NIM, INFR). This signifies that the movement of these variables over time is influenced by three distinct relationships.

Table 3: Johansen co-integration test
Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	0.05 Critical Value	t-statistics	Prob**
None*	0.787675	147.0152	95.75366	0.0000
At most 1*	0.778377	100.5261	69.81889	0.0000
At most 2*	0.626363	55.32283	47.85613	0.0085
At most 3	0.392140	25.78872	29.79707	0.1352
At most 4	0.249430	10.85440	15.49471	0.2206
At most 5	0.072156	2.246744	3.841465	0.1339

Notes: ***indicates significance at the 5% level

Empirical estimation

Table 4 presents the outcome of the OLS regression analysis, which displayed the estimated coefficients. The constant term's estimated coefficients indicate that domestic investment in Nigeria increases by 35% when all other variables (FSE, MSV, RINR, NIM, INFR) remain constant. Further examination of the results showed that, while the estimated coefficient for FSE indicates that a 0.724824% change in FSE leads to a corresponding increase in gross domestic investment, this relationship was not statistically significant. The conclusion drawn from these findings is that a more efficient financial system has a positive effect on gross domestic investment in Nigeria.

The estimated MSV coefficient of 0.063489 has a probability of 0.0322, indicating that a percentage change in MSV results in a corresponding increase in Nigeria's gross domestic investment (GDI), which was statistically significant. In contrast, the real interest rate (RINR) resulted in a negative coefficient of -0.133275 but was not significant, having a probability value of 0.4828. This suggests a less substantial effect of RINR on GDI in Nigeria. Additionally, the net interest margin (NIM) has a positive coefficient of 1.00590 with a significant probability value of 0.009. Lastly, inflation rate (INFR) affects GDI positively (with a coefficient of -0.017965) but has an insignificant probability value of 0.8515.

The R^2 {R-Squared} which measures the overall goodness of fit of the entire regression, shows the value as 0.8008which is approximately 80 per cent. This indicates that the independent variables (FSE, MSV, RINR, NIM and INFR) accounts for about 80 per cent of the variation in

the dependent variable (GDI). Hence, the study does have a goodness of fit. The adjusted R-squared of 0.7625indicates the additional input variables are not adding value to the model.

Table 4: OLS regression result
Dependent Variable: GDI
Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	35.68299	5.804079	6.147916	0.0000
FSE	0.724824	0.454980	-1.593090	01232
MSV	0.063489	0.280600	2.262640	0.0322
RINR	-0.133275	0.168737	-0.789837	0.4368
NIM	1.005900	0.267643	3.758366	0.0009
INFR	-0.017965	0.095010	-0.189083	0.8515
R-squared	0.800842	Durbin-Watson stat		1.779209
Adjusted R-squared	0.762543	Hannan-Quinn criter.		6.467038
F-statistics	20.90994	Akaike info criterion		6.375941
Prob(F-statistic)	0.000000	Schwarz criterion		6.650766

Source: E-Views statistical package 2022

Discussion of findings
The result of OLS regression techniques showed that while financial system efficiency had a positive effect on gross domestic investment in Nigeria, the impact did not reach statistical significance. This suggests that financial system efficiency may only have a positive impact on gross domestic investment in the long run (Dodge, 2016). According to Dodge (2016), an efficient financial system helps investors receive high returns on their investments, which are adjusted for risks and minimize the cost of capital for borrowers. Additionally, an efficient financial system allocates economic resources to the most productive investments. Similarly, the regression results for money supply velocity (MSV) have a positive and significant impact on domestic investment in Nigeria. According to Kartaev (2018), the influence of money supply velocity on investment depends largely on the level of the country's development. In poor countries, the expansion of money supply can only cause excessive inflation and thus affect investment, whereas these is no so for rich countries (Perevyshina, 2017). However, if money supply is properly controlled, it will lead to increase in domestic investments.

Furthermore, the ordinary least squares (OLS) analysis revealed that real interest rate has a negative impact on gross domestic investment in Nigeria. Essentially, this means that higher interest rates increase the cost of borrowing, which typically discourages investment due to the higher opportunity cost of investing. This finding is consistent with the research conducted by Tejvan (2019), which demonstrated an inverse relationship between real interest rate and domestic investment, particularly when the interest rate exceeds the inflation rate. On the other hand, the net interest margin (NIM) had a positive effect on gross domestic investment in Nigeria, although the

result was statistically significant, which aligns with prior expectations. Given that banks play a pivotal role in directing funds towards domestic investments, the net interest margin is a crucial parameter for evaluating the effectiveness of these intermediation processes (Roman, 2009).

Lastly, inflation rate negatively and insignificantly impacted on gross domestic investment in Nigeria during the period. According to Shaalan (2012), inflation or the expectation of inflation is bad for investment as it is generally accompanied by magnification of illiquidity risk, uncertainty and changing spectrum of profit opportunities. It is therefore suggested that inflation has a direct negative impact on domestic investment. Similarly, Bernstein and Patel (1992) maintain that continuous inflation induces the wrong kind of investments in a country.

CONCLUSION AND RECOMMENDATION

The purpose of the research was to analyze the effect of financial system efficiency and money supply on gross domestic investment in Nigeria. Specifically, the study aimed to explore the impact of financial system efficiency, money supply velocity, real interest rate, net interest margin, and inflation rate on domestic investment in Nigeria. The findings of the study were gathered through various empirical tests, using credible data sources. The research results revealed that financial system efficiency had a positive but insignificant impact on gross domestic investment.

Therefore, regulatory authorities must make efforts to improve the efficiency of financial systems as they impact every sector of the economy. The study also found that money supply velocity had a significant and positive effect on domestic investment. As such, more money should be supplied to the productive sectors of the economy to enhance domestic investment. Moreover, the study found that real interest rate had a negative effect on domestic investment but was not statistically significant. This implies that when interest rates on borrowed funds are adjusted for inflation, they discourage investment as the opportunity cost of investment increases. The research further revealed that net interest margin improved domestic investment and can be used as a tool for banks to boost gross domestic investment by comparing income and expenses when making investment decisions.

Lastly, the study found that inflation rate should not be used as a way to increase the base of gross domestic investment in Nigeria, as it has a negative impact on the increase. In conclusion, the findings of the study indicate that financial system efficiency and money supply velocity play significant roles in promoting gross domestic investment and should, therefore, be given priority attention to boost domestic investment in Nigeria.

From the findings, the study suggested the following recommendations for policy implementation:
1. The monetary authorities should revisit their structural policy frameworks that promote competition, innovation and efficiency of the financial system. In particular, actions need to be taken to support efficiency through improved regulation of financial institutions, securities markets and pension funds.
2. To overcome the problem of low investments, the Nigerian government should maintain a stable growth of the real money supply and control price increases and financial bubbling.
3. The investors of enterprise should make correct and informed decisions according to change of interest rate and the government should make flexible investments policies and pay more attention to increase the sensitivity of each investment subject to interest rate.

4. Effort should be taken to extend financial services to broader segment of the economy. This has potential to increase deposit base of banks which could translate to lower interest rates and hence a positive net interest margin.
5. Policy makers in Nigeria should take into account that implementing policies that will affect domestic investment positively is also important for economic growth. Thus, continuous pursuit of price stability should be enforced with a view to pushing down inflationary pressure.

REFERENCES

Ali, S. &Alu, A. (2013). Financial intermediation and economic growth in Sudan: An empirical investigation. *British Journal of Economics, Management & Trade*, *3*(4): 332-358.

Atyseye, F. A. Nedozie, F. O. & Obasam, J.O. (2017). Selected macro-economic determinants of savings: Empirical evidence from Nigeria. *International Journal of Social Science and Economic Research 2*(12) 5528-5551.

Abate. P.., (2016). Determinants of private sector investment in a less developed country: A case of the Gambia. *Cogent Economics & Finance*, *8*(1), 179-209.

Ayeni, R. K. (2014). Macroeconomic determinants of private sector investment - An ARDL approach: Evidence from Nigeria. *Global Advanced Research Journal of Management and Business Studies*, *3*(2), 82–89. http://garj.org/garjmbs/index.htm

Athanassopoulos, A. & Giokas, D. (2000). The use of Data Envelopment Analysis in Banking institutions: Evidence from the Commercial Bank of Greece. *Interfaces* 30, 81–95

Bernstein, E.M., & Patel, I.G., (1992). Inflation in relation to economic development. *Staff Papers, 2(8), 363-398.*

Bonga, W. G., &Nyoni, T. (2017). An empirical analysis of the determinant of private investment in Zimbabwe. *Dynamic Research Journals: Journal of Economic and Finance (DR-JEF)*, *2*(4), 25–84

Berger, A. & Humphrey, D. (2017). Efficiency of financial institutions: International survey and directions for future research. *Journal of Operational Research* 98, 175–212.

Chu, S. & Lim, G. (2018). Share performance and profit efficiency of banks in an oligopolistic market: Evidence from Singapore. *Journal of Multinational Financial Management* 8, 155-168.

Cvilikas, A. & Jurkonyte-Dumbliauskiene, E. (2016). Assessment of risk management economic efficiency: Applying economic logistic theory. *Transformations in Business & Economics* 15, 207–19.

Duruechi, M. & Ojiegbe, M., (2015). Government policy and private investment in developing countries. *IMF Staff Papers*, 31(2).

Diallo, B., (2018). Bank efficiency and industry growth during financial crises. *Economic Modelling. 68*(8), 11–22.

Dodge, D., (2016). Improving financial system efficiency. *Economic Club of Toronto, 45-56.*

Drucker, P. (1963). Managing for business effectiveness. *Harvard Business Review.* 41(3), 53-60

Eregha, M. O. (2010). Monetary policy in Nigeria in the 1980s and prospects in the 1990s. *CBN Economic and Financing Review, 30*(1), 1-31.

Edgeworth, F. (1881). Mathematical Psychics: An essay on the application of mathematics to the moral sciences. *Mathematical Physics*.

Farrell, M. J. (1957). The measurement of productive efficiency. *Journal of the Royal Statistical Society*, *120*(3). 253–81.

Fripong, J. M., & Marbuah, G. (2010). The determinant of private sector investment in Ghana: An ARDL approach. *European Journal of Social Sciences*, *15*(2), 250–261.

Irsova, S. (2010). Measuring bank efficiency. *Charles University in Prague*

Karagoz, K. (2010). Determining factors of private investments: An empirical analysis for Turkey. *Sosyoekonomi Journal*, *Sosyoekonomi Society*, *6*(1), 67-78.

Kablan, S. (2010). Banking efficiency and financial development in Sub-Saharan Africa. *African Finance Journal*, *11*(2), 28–50.

Kartaev, F., (2017). Is inflation targeting good for economic growth? *VoprosyEkonomiki*. *3*(5), 12-24.

Katib, D., & Mathew, F, S. (2000). Financial markets and Institutions 7th edition.

Muhammad, T. M., & Khan, S. (2013). The determinants of private investment and the relationship between public and private investment in Pakistan. *Working Paper* No. 49301.

Mckinley, V. &Banian, K. (2000). Central Bank operational measurement: Meaning and measurement. *Central Bank Publications* 45-81

National Bureau of Statistics (2011). *Federal Government of Nigeria: The Presidency - GDP Expenditure Report.* National Bureau of Statistics available at www.nigerianstat.gov.ng

Oshikoya, T.W. (1994). Macroeconomic determinants of domestic private investment in Africa: An empirical analysis. *Economic Development and Cultural Change*, *42*(3), 56-70.

Perevyshina, E.A., (2017). Influence of inflation on the pace of economic growth. *Finance and Credit Journal, 7*(8), 43-52.

Peter, S. R & Milton, H. M. (2006) *Money and capital markets: Financial institutions and instruments in a global market place*. Irwin: McGraw.

Roman, H. (2009). Interest margin determinant of Czech Bank. *Working paper*, WP/56/405

Saqib, N. (2013). Impact of development and efficiency of financial sector on economy growth: Empirical evidence form developing counters. *Journal of knowledge management, Economics and Information Technology*, *3*(3), 163-171.

Sajid, G. M., & Sarfraz, M. (2008). Saving and economic growth in Pakistan: An issue of causality. *Pakistan Economic and Social Review*, *46*(1), 17–36.

Shaalan, S., (2012). Impact of inflation composition of private domestic investment. *IMF Library, 2*(9), 34-45.

Soteriou, C. & Zenos, J. (1997). Inputs, outputs and theory of production cost at depositoryfinancial institutions. *Journal of Finance 32*(4) 1251-1266.

Tejvan, P., (2019). Investment and the rate of interest. *Journal of Practical Economics*. *3*(09), 34-45.

Tang, S., Selvanathan, E. A. & Selvanathan, S. (2008). Foreign direct investment, domestic investment, and economic growth in China: A time series analysis. Research Paper No. 2008/19. Department of International Business and Asian Studies, Griffith University