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THE NEXUS BETWEEN BANKING INTERMEDIATION AND ECONOMIC PERFORMANCE IN NIGERIA

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Abstract

The research analyzes the impact of bank intermediation and economic performance in Nigeria for a period of 56 data point (quarterly) from 2009 to 2022 and attempt to fill the missing gap and to make a contribution to knowledge. The empirical investigation was ascertained through the adoption of the descriptive statistics, unit root test, ARDL bound test and ARDL Long run test. The descriptive statistic shows that both the dependent and the independent variables are normally distributed from the Jarque-Bera Probability value of 5% level of significant. The unit root report indicates that the series are integrated at order one I(1) and I(0), while the ARDL Bounds Test result for cointegration demonstrated a long run impact among the variables. The ARDL estimates of the long run regression further report that bank intermediation is an important component that determines the economic performance in a country, that there is a positive significant impact between bank intermediation and economic performance in Nigeria. The Study therefore recommends that the financial system should completely understand bank intermediation and make its application to positively affect the economy and the needs to stimulate economic growth and development by using viable policies and incentives to promote private sector credit.

Keywords: Bank Intermediation, Economic Performance, ARDL Bound Test, Jarque-Bera

1 Introduction

Banks play an important role of financial intermediation in the financial system of every economy of the World. A well-developed banking sector has a good number of highly capitalized banks that will have a positive impact on the economic performance of a nation (Iwedi & Wachukwu, 2024; Orenuga & Godwin, 2022). The banking intermediaries of the Nigerian economy are expected to be responsible for financial resource mobilization and intermediation between the various sectors of the economy. They are to redirect funds from the surplus sectors to the deficit sectors of the economy (Onuh et al., 2022). Onwe and Adeleye, (2018) said that banking intermediaries mobilize bank deposits and transform deposit money into bank credits, usually loans and overdraft. It is simply

the process of taking in money from depositors and then lending same out to borrowers for investment and other economic development purposes. Banking intermediaries are able to augment their capacity to finance businesses and contribute positively to the economy in general through the process (Chukwuma et al., 2019). The economics of banking intermediation are structured and based on the fundamental roles of financial institutions. Besides pooling the resources of small savers and efficiently allocating same to deficit economic units for productive investments, financial intermediaries provide safe keeping modalities for real money balance in deposit accounts and facilitate transaction, exchange and specialization (Osei-Fosu et al., 2022). They provide liquidity and operate the payments system of nations. A major undermining factor to economic growth and development in Nigeria is the limited credit provided to the private sector. The level of credit extended by the government and financial institutions to the private sector remains abysmally low, negatively impacting the country's economic performance, despite efforts to increase access to credit to the private sector. A costeffective and convenient way to increase financial inclusion in Nigeria is the use of Unstructured Supplementary Service Data (USSD) in mobile banking. However, the full potential of USSD in enhancing bank intermediation and economic performance has been undermined by the lack of regulatory mechanism security lapses which has led to cases of fraudulent activities (Pantielieieva et al., 2019). A basic source of funds for banks to lend to individuals and business entities is bank deposits. However, banks inability to foster intermediation and contribute to economic performance is due to the low rate of savings which has led to a limited pool of deposits for banks to utilize in Nigeria. Real Gross Domestic Product (GDP) in recent years has experienced slow growth in spite of the likelihood of using bank intermediation to foster economic performance and development in Nigeria. This has undermined the country's overall economic performance as a result of a lack of effective financial intermediation, high rate of interest and limited access to credit facilities. In spite of laudable efforts by the Nigerian government and financial institutions to foster investment drive, there is a relatively low level of investment in the country when compared to other developing countries. This is because of the poor state of bank intermediation in the country is as a result of a lack of trust in the financial system, limited access to credit facilities and the high cost of borrowing. It is on this premise that the researcher wants to investigate the relationship between bank intermediation and economic performance in Nigeria for a period of 56 data point (quarterly) from 2009 to 2022 and attempt to fill the missing gap and to make a contribution to knowledge.

2.1 Theoretical Framework

The study is anchored on the theory of financial intermediation. The theory is traced to the work of Gurley and Shaw (1960). The theory according to Allen and Santomero, (1998) is designed for institutions that take deposits or issue insurance policies and channel funds to firms. The theory states that the development of intermediaries

tends to lead the development of the financial markets; the development of the financial sector leads to the development of the economy. Banks have existed since ancient times, taking deposits from households and making loans to economic agents requiring capital. The economic agents invest the funds in productive economic activities which yield returns and boost economic growth. The theory explains that financial intermediation has a vital role on the economy's growth because financial intermediaries have a responsibility to influence investment in the country by promoting borrowing. Borrowing is increased by concentrating financial instruments from saving to borrowing which in turn influence investment that accelerates economic growth. Financial intermediaries also have a role of solving information asymmetry between borrowers and lenders which causes an increase in transaction costs. The theory of financial intermediation completely disqualifies the traditional Arrow-Debreu model of resource allocation. This model states that firms and households interact through markets and financial intermediaries play no role. According to the model, markets are perfect and complete, the allocation of resources is therefore efficient and there is no room for intermediaries to improve welfare.Schumpeter (1911), vindicated that efficiently operating financial intermediaries positively affect economic growth. Gurley and Shaw (1973), also stated that if a financial sector is highly intermediated, levels of savings increase and so is the level of investment which increase rate of growth of an economy. Economic growth is positively stimulated in the presence of wellestablished financial intermediaries because financial resources are efficiently allocated to the firms and the individuals who are able to effectively use them fully to yield the highest returns on capital (Goldsmith, 1969). Moreover, the Modigliani-Miller theorem applies in this context as it asserts that financial structure does not matter as households can construct portfolios which offset any position taken by an intermediary, therefore intermediation cannot create value (Fama, 1980). According to Allen et al. (1998), the view that financial markets allow an efficient allocation and intermediaries has no role to play is clearly at odds with what is observed in practice. This concluded that financial intermediaries positively affect financial depth of the country by reducing transaction costs which in turn promote economic growth. Financial intermediaries positively affect economic growth if the financial intermediaries are well established. Therefore, financial intermediation is one of the indicators of bank performance, as the owners of this theory see that financial intermediation plays an important role in the growth process by transferring financial resources from savers to borrowers, thus affecting investment and economic growth. This theory suggests that financial intermediation can overcome market failure and thus solve the information asymmetry problem. The relevance of the financial intermediation theory to the study is that it provides a framework to comprehend how banks create and facilitate the flow of funds between savers and borrowers. This theory will help to analyze how banks mobilize savings,

allocate credit and contribute to economic growth, through bank intermediation role to enhance Nigeria's economic performance (John & Fisayo, 2022).

2.2 Empirical Review

Kamara et al. (2024) examined the effect of credit to the private sector on economic growth in Sierra Leone. The study uses aggregate amount data on real Gross Domestic Product (GDP), credit by banks, and other control variables for the period 1992 to 2022. Variables are tested for the existence of unit roots and the Autoregressive Distributed Lag (ARDL) was used to test for cointegration and estimation of short-run and long-run models of growth. The results show that credit to the private sector has a positive effect on economic growth in Sierra Leone. Other results show that interest rates and inflation harm real GDP growth. The important policy implication is the need for the central bank to continue its financial stability efforts, the need for strengthened macroeconomic stability, and structural reforms that bind investment celebrate for more bank credit to the private sectors, in reducing to enhance growth. Inflation equally hurts economic growth hence the state needs to reduce its levels. This could be achieved through fiscal discipline and exchange rate stability given that the country imports most commodities. Stable exchange rates would stop the country from importing inflation. Amadi et al. (2024) examined the empirical effect of deposit money banks' credits on Nigeria's private sector's investments. The study was evaluated empirically over a period of forty-one years, from 1981 to 2021. Deposit money banks' credit is proxy by bank credits, with interest rate and money supply moderating regressors while private sector investment is measured as private investments. Utilized for analysis are sourced secondary data from the Central Bank of Nigeria statistical bulletin and the applied methods of analysis include descriptive statistic technique, Augmented Dickey-Fuller's Unit Root test, Auto regressive Distributed Lag technique. The findings obtained showed clearly that private investments and banks' credits were stable at levels, as cost of credit (interest rate) and money (liquidity) supply were stationary at first difference. In addition, banks' credits had direct and significant effects on the regress and (private investments) in Nigeria, cost of credit had negative but significant bearing on private investments while money supply had positive and significant effects the independent variable. Lastly, there exists long-run equilibrium rapport among private investment, banks' credits, interest (credit) rate and money supply at 5 percent critical level. Sequel to these findings, it is therefore concluded that deposit money banks' credits had significant-positive effects on private sector investments in Nigeria in both short run and long run. It is thus, recommended among others that deposit money banks need encouragement to expand credit extensions to private sector operators for sustainable enhancement of investments in this sector of the economy.

Magaji et al. (2023) investigated the analysis of the impact of banking sector credits on the real sector in Nigeria. It uses the Auto Regressive Distributed Lagged model. The bound testing result indicates that there is a long-run

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association among the variables of interest with Real GDP as the dependent variable. The result indicates that Commercial Bank Credit in the long and short run has a positive impact on Nigeria's GDP. Domestic private investment was found to have a negative relationship with the real sector in the long and short runs. The estimated long and short runs equation of the specified econometric model shows a significant positive relationship existing between government capital expenditure and real sector. In the short run, a significant increase in DPI, CBC, and GCE will bring a significant increase in RGDP. A unit increase in DPI, CBC, and GCE will bring about an increase in RGDP by 8.71 units, 3.18, and 0.42 respectively and the parameter estimate of DPI, CBC and GCE are statistically significant as computed by the t-value being -1.83, 2.19 and 1.95 respectively. The study reveals that utilization of bank credits to the real sector is significant toward achieving Nigerian economic growth.

3.1 Model Specification

The model estimated in this study is rooted in the financial repression hypothesis as stated in the McKinnon-Shaw hypothesis, McKinnon (1973) and Shaw (1973). It is hinged on the theoretical framework. The proxies for independent variable are: credit to private sector (CPS), Unstructured supplementary service data (USSD), Automated teller machine (ATM) point of sales (POS) and bank deposit (BDD), while proxies for the dependent variables are gross domestic product (RGDP) proxy for economic performance. The functional, mathematical and econometric form of the models was thus presented.

$RGDP_t = (CPS_t, USSD_t, ATM_t, POS_t, BDD_t)$ (3.1) z

Transforming the functional equation (3.1) to a mathematical model are as follows:

$RGDP_t = \beta_0 + \beta_1 CPS_t + \beta_2 USSD_t + \beta_3 ATM_t + \beta_4 POS_t + \beta_5 BDD_t$ (3.2)

Transforming the functional equation (3.1) to an Ordinary Least Squares (OLS) linear regression equation as follows:

$RGDP_t = \beta_0 + \beta_1 CPS_t + \beta_2 USSD_t + \beta_3 ATM_t + \beta_4 POS_t + \beta_5 BDD_t + \mu_t$ (3.3)

The corresponding econometric model is specified after taking the logarithmic transformation of the variables as follows;

$\log RGDP_t = \beta_0 + \beta_1 log CPS_t + \beta_2 I log USSD_t + \beta_3 log ATM_t + \beta_4 log POS_t + \beta_5 log BDD_t + \mu$ (3.4)

4 Results and Discussion

4.1.1 Descriptive Statistics

This section starts with an overview of the variables under study. It summarizes key statistics such as mean, median, maximum, minimum, standard deviation and normality tests. Each variable has forty-one (41) observations with none missing. The Jarque-Bera probability values were also

Indicated at the 5% significant level. The result is presented below in table 4.1

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Table 4.1 Descriptive Nature of the Variables

	RGDP	ATM	POS	USSD	CPS	BDD
Mean	4.18E+08	1.47E+08	54584425	60352368	7218.507	7219.272
Median	21401520	1.24E+08	10765892	10578284	4282.780	5420.397
Std. Dev.	1.39E+09	87440312	71738600	92606419	7403.283	3540.842
Skewness	3.471718	0.235933	1.056276	1.267066	1.597292	0.514641
Kurtosis	13.68987	2.031728	2.645927	2.863375	4.860786	1.937225
Jarque-Bera	372.3607	2.658811	10.51473	14.75945	31.32225	5.016260
Probability	0.000000	0.264635	0.005209	0.000624	0.000000	0.081420
Observations	56	56	56	56	56	56

Source: Author's computation

Table 4.1 shows the characteristics of the data set used for analysis in this study. The table shows that the mean, median, standard deviation, skewness and kurtosisvalue for all the variables. From the result, the mean value of real gross domestic product (RGDP) is 4.18 billion naira, while the standard deviation is 1.39 billion naira. The skewness statistic value of 3.471718 for RGDP which indicated that the series for RGDP is positively skewed. This also means that the series is tilted towards the right. The Jargue-Bera statistic value of 372.3607 and its corresponding probability value of 0.00000 showed that the series (GDP) is not normally distributed. This assertion is made because the probability value of 0.0000 is less than 0.05, thus, the hypothesis of the RGDP not being normally distributed is accepted. A cursory look at Table 4.1 also shows that the mean and the standard deviation of automated teller machine (ATM) for the period under review was 1.47 billion naira. The skewness statistic value of 0.235933 for ATM indicated that the series is also positively skewed. This also means that the series is also tilted towards the right. The Jargue-Bera statistic value of 2.658811 and its corresponding probability value of 0.264635 shows that the series (ATM) is normally distributed. This assertion is also made because the probability value of 0.264635 is greater than 0.05, thus, the hypothesis of the ATM not being normally distributed is rejected. Furthermore, Table 4.1 revealed that the mean and standard deviation of point of sales (POS) for the period under review was 54584425 volume. Its skewness statistic value of 1.056276 indicates that the series is also positively skewed. This also means that the series is also tilted towards the right. The Jargue-Bera statistic value of 10.51473 and its corresponding probability value of 0.005209 revealed that the series (POS) is not normally distributed. This assertion is also made because the probability value of 0.005209 is less than 0.05, thus, the hypothesis of the POS not being normally distributed is accepted. Table 4.1 also shows that the mean value of bank deposit (USSD) for the period under review was 60352368 volumes. The skewness statistic value of 1.267066 for bank deposit indicates that the series is also positively skewed. This also means that the series is

also tilted towards the right. The Jargue-Bera statistic value of 14.75945 and its corresponding probability value of 0.000624 shows that the series (USSD) is not also normally distributed. This assertion is made because the probability value of 0.000624 is less than 0.05, thus, the hypothesis of the USSD not being normally distributed is accepted. From Table 4.1 it can also be seen that the mean value of credit to private sector (CPS) for the period under review was 7218.507 billion naira. The skewness statistic value of 1.597292 for CPS indicates that the series is also positively skewed. This also means that the series is also tilted towards the right. The Jargue-Bera statistic value of 31.32225 and its corresponding probability value of 0.000000 revealed that the series (CPS) is not normally distributed. This assertion is made because the probability value of 0.000000 is less than 0.05, thus, the hypothesis of the CPS not being normally distributed is accepted. Finally, the mean value of bank deposit is 7219.272 billion with a corresponding standard deviation of 3540.842 billion. In the addition the result of the kurtosis revealed that bank deposit is tilted toward the right that is positively skewed as expected. The Jargue-Bera statistic value of 5.016260 and its corresponding probability value of 0.081420 revealed that the series of bank deposit is normally distributed. This assertion is made because the probability value of 0.081420 is greater than 0.05, thus, the hypothesis of bank deposit not being normally distributed is rejected. With these characteristics of the data or series as shown in Table 4.1, there is the need to ascertain the stationarity properties of the data set employed for analysis in the study in other to avoid a spurious result. To do this, the Augmented Dickey-Fuller (ADF) unit root test was conducted and the result is presented in table 4.2 below.

Table 4.2 Unit Root Test using Augmented Dickey-Fuller (ADF) Test

Variables	***Augmented Dickey-Fuller Test***		**Lag**	**Order of int.**	**Remark**
	@ level	**@ 1st Diff**			
Log(RGDP)	-2.103864	-8.098487	Maxlag=9	I (1)	Stationary
Log(CPS)	-5.957407		Maxlag=9	I (0)	Stationary
Log(USSD)	-3.507800		Maxlag=9	I (0)	Stationary
Log(ATM)	-2.568887	-7.475908	Maxlag=9	I (1)	Stationary
Log(POS)	-2.453422	-9.539532	Maxlag=9	I (1)	Stationary
Log(BDD)	-3.400443	-8.815275	Maxlag=9	I (1)	Stationary
	1% level	-4.133838			
Test of CV	5% level	-3.493692			
	10% level	-3.175693			

Source: Author's own computation using E view 10

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The above results revealed that the following variables both dependent and independent variables (RGDP, TINV ATM, POS and BDD) were stationary at first difference that is integrated of order one that is I (1). While CPS and USSD were stationary at level that is I (0). The mixed order of integration (at level and first difference) suggests an underlying long run relationship, hence, the use of the autoregressive distributed lag (ARDL) approach is justified.

Table 4.3: ARDL Bounds Test result for cointegration

F-Bounds Test	**Null Hypothesis: No levels relationship**			
Test Statistic	**Value**	**Signif.**	**I(0)**	**I(1)**
F-statistic	3.793694	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

Source: Author's computation

Table 4.3 showed the long-run properties of the variables in the model specified. The result showed that the variable exhibits joint convergence in the long-run. In other words, there is a long-run relationship among the variables in the first model. This is because the ARDL F-statistic value of 3.793694is greater than the 5% upper bound (I1 Bound) value of 3.38 and lower bound value of 2.39. Thus, the null hypothesis of "no level relationship" or "no long-run relationship is rejected and its alternative hypothesis is accepted. This is a sufficient condition to estimate the conventional ARDL error correction model (ECM). The result of the ARDL-ECM is presented in Table4.4 below. However, it is only wise to select the best ARDL model in the midst of various competing model. To achieve this, the Akaike information criteria was used to select the best ARDL model from the top twenty (20) models Akaike Information Criteria (top 20 models)

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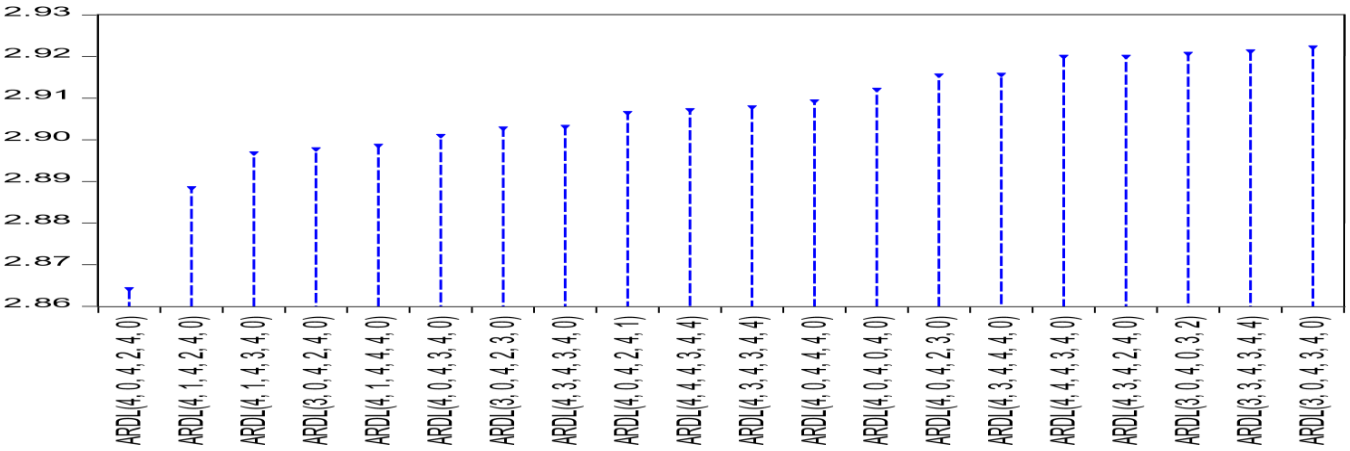

Figure 4.1 Akaike Information Criteria for best lag Selection

The decision criterion for the Akaike information criteria for model selection is that, the ARDL model with the smallest or least Akaike value is the best. Thus, the ARDL (4, 0, 4, 2, 4, 0) is the best and selected for the estimation process as it recorded Akaike value is the least. The result of the estimated ARDL (4, 0, 4, 2, 4, 0) is presented in Table 4.4.

4.1.4 ARDL Estimates of the Long Run Regression

The results of the ARDL estimates of the long run relationship in the model are presented in tables 4.4.

Table 4.4ARDL Long Run Regression Estimates for the Model

Dlog(RGDP): dependent Variable

	Levels Equation Case 2: Restricted Co nstant and No Tre nd			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CPS)	3.192270	1.642492	1.943552	0.0624
LOG(USSD)	0.303268	1.065482	0.284630	0.7781
LOG(ATM)	-0.823692	0.898845	-0.916389	0.3676
LOG(POS)	-1.067388	0.882541	-1.209449	0.2370
LOG(BDD)	1.315404	1.522189	0.864153	0.3951
C	7.577087	10.79187	0.702111	0.4886

EC = LOG (RGDP) - (-0.8237*LOG (ATM) -1.0674*LOG (POS) + 0.3033

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*LOG (USSD) + 3.1923*LOG (CPS) + 1.3154*LOG (BDD) + 7.5771)

Source: Author's own computation

The result of the long run relationship between the independent variables (CPS, USSD, ATM, POS and BDD) and the dependent variable (RGDP) is explained by estimating the long run ARDL Model. Table 4.4 summarizes the effects of changes in the independent variables on real aggregate output in model one. The long run ARDL estimates revealed that credit to private sector (CPS) has a positive impact on economic growth in Nigeria as expected from theoretical and empirical results. This is seen from the result as the coefficient of credit to private sector (CPS) has a positive value of 3.192270 units. This implies that as credit to private sector (CPS) increase by 1 unit, it would result to about 3.192270unit's increase of real output growth in Nigeria all things being equal. The probability value of 0.0624for credit to private sector (CPS) indicated that it was not statistically significant at 5 percent (0.05) level of significance. The result does not conform to our theoretical and some empirical literatures. Likewise, table 4.4 also shows that (USSD) has a positive effect on real output growth in Nigeria as the coefficient of (USSD) with a coefficient of 0.303268 units. The positive value of 0.303268 units for (USSD) indicates that a one percent increase in USSD would result to about 30 percent increase in economic growth in Nigeria all things being equal. The corresponding probability value of 0.7781 showed that the variable USSD has an insignificant impact on economic growth over the period of the study. This assertion is also made because the corresponding probability value of 0.7781 is greater than 5 percent (0.05) level of significance. Furthermore, automated teller machine (ATM) as financial deepening measures has a negative impact on economic growth in Nigeria with a coefficient of -0.823692. This implies that if bank deposit through (ATM) increases by 1 unit, this would lead to decrease in real gross domestic product by -0.823692units all things being equal. This result is not in conformity with our expected result and as well with some empirical results. The probability value of 0.3676for automated teller machine (ATM) indicated that it is not statistically significant at 5 percent (0.05) level of significance. Furthermore, the results of the point of sales variables in table 4.4 revealed that point of sales (POS) had a negative impact on economic growth in Nigeria as against our expected result. This implies that as point of sales (POS) increase by one unit, it would lead to decrease in economic growth in Nigeria by -1.067388 units all things being equal. This implies that point of sales (POS) is in agreement with our theoretical expectation and some empirical results in this study. The probability value of 0.2370for point of sales (POS) indicated that it is not statistically significant at 5 percent (0.05) level of significance. Finally, Furthermore, the results of bank deposits variables in table 4.4 revealed that bank deposits (BDD) had a positive impact on economic growth in Nigeria as our expected result. This implies that as bank deposits (BDD) increase by one unit, it would lead to increase in economic growth in Nigeria by 1.315404 units all things being equal. This implies that bank deposits

(BDD) agree with our theoretical expectation and some empirical results in this study. The probability value of 0.3951for bank deposits (BDD) indicated that it is not statistically significant at 5 percent (0.05) level of significance.

5.2 Conclusion and Recommendation

Bank intermediation is important components that determine the economic performance in a country. The quality of an entity's financial reports as well as realities regarding its true financial state is significantly affected by management of the economy. Bank intermediation was seen in this study and prior studies as tools in the hand of management to manipulate performance results, report conceal financial un-healthiness and pursuit of benefits based on targets. Therefore, the financial system should completely understand bank intermediation and make its application to positively affect the economy a nation. The study therefore recommend that there is needed to stimulate economic growth and development by using viable policies and incentives to promote private sector credit.

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