

Institutional Quality, Financial Development and Investment in Nigeria: An Asymmetric Cointegrating Approach

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Abstract:- The study examined the asymmetric cointegrating relationship between financial development and investment and the moderating role of institutional quality on investment. Time series properties were examined using the Augmented Dickey Fuller (ADF) and the Philip-perron (PP) unit root test. It also used the Threshold Autoregressive (TAR) and momentum Threshold Autoregressive (MTAR) for cointegrating investigation, then the Vector Error Correction Model (VECM). The core explanatory variable used in the study was financial development, proxy by the IMF financial development index. While the explained variable is foreign direct investment and domestic investment, then the moderating effect of institutional quality was examined. The results show that there was evidence of both symmetric and asymmetric integration between these variables. A long cointegrating relationship between institutional quality, financial development and investment was found. The study found evidence of asymmetric cointegrating relationship between institutional quality, financial development and investment. Furthermore, it was observed that investment adjusted faster in the positive discrepancy than the negative which suggested that an optimal level of finance is crucial for economic growth. It is therefore, expected that the Nigerian government through the Central Bank put in place policies capable of improving on financial development and further improve on the fight against corruption so ride our investment institutions of sharp practices.

Keywords:- Financial Development, Foreign Direct Investment, Domestic Investment, Institutional Quality and Nigeria.

I. INTRODUCTION

Foreign direct investment flows (net inflows) have been decreasing in Nigeria in recent years. There may be so many factors responsible, but it is certainly not unconnected with financial development. According to Asongu and Odhiambo (2019), inadequate development of the financial sector either in the market aspects or relating to institutions restricts the readiness of an economy to enjoy the benefits accruing from foreign direct investment." They added that the benefits of other forms of capital inflows can also be reduced as a result of an inadequate development in the

financial sector".

Foreign direct investment is directly linked with financial market as the foreign investor aims at acquiring shares in a corporation and other short-term and long-term securities. In view of the preceding statement, decrease in foreign direct investment inflows is an indication of inadequate financial development. This is worrisome as companies that issue securities may not get adequate capital to venture into a new line of business or expand an existing business. As a consequence, domestic investment will drop. All of these possibilities are not healthy for the economy. „Development in the financial sector enable the flow of funds, which drives consumption and investment, thereby increasing employment, lifting individuals out of poverty, and thus improving economic performance (Tchamyou and Asongu, 2017).

Also worthy of note is the picture decrease in FDI inflows create of institutional quality. According to Akinkunmi (2017), "host countries need to establish a transparent, broad and effective enabling policy environment for investment and to build the human and institutional capacities to implement them. It will not be out of place to argue that the moderating effect of institutional quality on financial development in order to stimulate domestic and foreign investments is not good enough. Note that net inflows of foreign direct investment represent 'series of new investment less disinvestment'. And since net inflows are dropping in recent years, it means that disinvestment outweighs reinvestment. In economics literature, this development is called 'capital flight' and it has serious consequence on economic growth and development. If the problem is not addressed, it will lead to depletion of capital in the stock exchange market. The value of naira will depreciate as the demand for it will drop. This will likely result in high inflation rate, which decreases both private and public sectors' savings. As a result, domestic investment will drop and the economy will likely slide into recession.

Another worrisome problem is the wide gap between manufacturing and agricultural sectors" access to commercial bank loans. If Nigeria was an industrialized country, it would not have been a subject of much concern. However, Nigeria is predominantly agricultural, yet loans from banks to this sector is low relative to the

manufacturing sector. Perhaps, farmers in rural areas do not have access to commercial bank loans. A well-developed financial system is expected to be inclusive. According to Chihak et al (2012), “access and efficiency are the most important features of financial system, and if a large proportion of members of the public who have investment plans cannot access loans, then financial systems are of limited use”.

Similarly, Tchamyou and Asongu (2017) noted that “development in the financial sector enable the flow of funds, which drives consumption and investment, thereby increasing employment, lifting individuals out of poverty, and thus improving economic performance”. As demonstrated in the background section, there is no inclusive finance in Nigeria as some sectors are more accessible to loans than others. Inadequate development of financial system is not healthy for an economy, and this is the case in Nigeria. Anyanwu and Yameogo (2015) notes that „an efficient intermediation process and improved financial sector increase the magnitude of domestic savings and boost the effectiveness of monetary policy in any nation or region by ensuring that scarce financial resources are channeled to the highest priority economic alternatives, outcomes and investment. The problems stated in the preceding paragraphs motivated this study.

The possibility of the Nigerian economy sliding into recession is high if the above problems are not addressed. The principal objective of this study is to examine the asymmetric cointegrating relationship for institutional quality, financial development and investment in Nigeria. Economists and so many people around the world embrace the concept of financial development which leads to inclusive finance. The expectation is that the idea of inclusive finance through financial development will result to increased investment which in turn leads to economic growth and development. Sadly, this is not the case of Nigeria. Some sectors have higher access to commercial loans even though other sectors need same magnitude of loan to establish businesses or expand existing ones. This theoretical expectation that is not met is one of the motivations for conducting this study. In view of this, this study will be significant. This study is not a cross country study. It is a study that undertakes to examine the asymmetric cointegrating relationship for institutional quality, financial development and investment in Nigeria using secondary data from published sources for the period 1981-2021.

II. LITERATURE REVIEW

➤ *Financial Development*

In an economy, the development of financial markets and financial intermediaries, which make up the financial system, is generally referred to as financial development. According to Mollah et al (2020), financial development refers to increase in the provision of financial products as well as services by a functional financial system to members of the public, enterprises and foreign investors in a country. Jiang and Mahmood (2019) define financial development as

a „financial system that works efficiently with regards to resource allocation and information provision, as well as operating as a cost-reduction mechanism.” According to Sennuga et al (2021), “financial development is a multidimensional concept and constitutes a potentially important mechanism for long run economic growth”. They added that “it plays fundamental roles in savings mobilization thereby enhancing investment growth in an economy”.

➤ *Foreign Direct Investment*

According to Ayanwale (2007), “foreign direct investment is an investment made to acquire a lasting management interest (usually 10% of voting stock or ordinary share) in a business enterprise operating in a country other than that of the investor defined according to residency, such investment may take the form of either „green field” investment (also called ‘mortar and brick’) or merger and acquisition which entails the acquisition of existing interest rather than new investment”.

Ogunkola and Jerome (2006) define foreign direct investment as “financial transactions aimed at acquiring a lasting interest in a company in another country; the lasting interest implies that the direct investor has a long-run relationship with, and significant influence on, the management and policies of the foreign company”. They added that “foreign direct investment usually takes place when a business organization in one country obtains all or much of the share capital of a business organization in another country, often through merger and acquisition”.

➤ *Institutional Quality*

North (1991) conceptualized institutions as „the rule of the game in a society which is the humanly devised constraints that shape human interaction.” Benyah (2010) defined institutional quality „as the extent to which procedures by the regulatory authorities foster investor protection and enhance greater access to funds for borrowers”. Anyanwu and Yameogo (2015) noted that ‘dysfunctional institutions generally render the economic environment unproductive and obstruct trade, thereby encumbering the growth objective of an economy’. Institutional quality represents effective leadership in a country to ensure that citizens and foreign investors go about their economic routines without difficulty. World governance and political risk indicators are used as proxy for institutional quality in this study.

➤ *Domestic Investment*

Bakare cited in Ewubare and Worlu (2020) defines investment as “the commitment of resources made with the hope of realizing benefits which are expected to occur over a reasonable period of time; an economic activity where an individual, group or government buys assets with the hope of receiving adequate risk premium or returns overtime”. According to Oyedokun and Ajose (2018), „domestic investment is an expenditure made to increase the total capital stock in an economy.” They added that domestic investment is undertaken ‘by acquiring more capital-producing assets and other assets that generate income

within the domestic economy" stressing that „physical assets particularly add to the total capital stock’.

➤ *Empirical Review*

There is dearth of studies linking institutional quality, financial development, and inclusive growth. Though there have been few studies on the either side linking finance-inclusive growth (see Greenwood and Jovanovich, 1990; and Kirkpatrick, 2000) or finance-growth and institution (see Allen et al., 2005; Garretsen et al., 2004; Gazdar and Cherif, 2015; Herwatz and Walle, 2014; Law et al., 2013). Meanwhile others focused on institution and growth (see Acemoglu et al., 2003; Easterly et al., 2004; Rigobon and Rodrik, 2004). Findings from these studies have been controversial.

Chang (2002) tested the competing hypotheses of supply-leading and demand-following for Mainland China. Findings suggest that there is independence between financial development and economic growth. It supports neither supply-leading nor demand-following hypothesis.

Peia and Roszbach (2015) re-examined the empirical relationship between financial and economic development while taking their dynamics into account and differentiating between stock market and banking sector development. The results indicate that among advanced economies, stock market development generally caused economic development while the causality between banking sector development and growth goes in reverse direction, most of the time. The results also suggest that the extensive empirical evidence that finance causes growth is sensitive to the type and dominance of a particular financial institution. The findings complement recent studies suggesting that not just the size, but also the structure of financial system may matter for growth.

Gazdar and Cherif (2015) investigated on how financial development affects economic growth in (Middle East and North Africa) MENA countries and examined how the responsiveness of economic growth to financial development depends upon the indicator of institutional quality. The result indicated that most indicators of financial development have significant negative effect on economic growth. However, the sign of the coefficient of interaction variable is significantly positive. This provides strong evidence that institutional quality mitigates the negative effect of financial development on economic growth i.e., financial development can promote economic growth only in countries with sound institutional environment. The threshold for the four institutional variables is 0.60, 0.57, 0.59, and 0.55.

Abedifar, Hassan and Tarazi (2016) investigated the relative importance of Islamic banks, alongside their conventional counterparts, in relation to banking and financial development and economic welfare. The result revealed significant positive relationship between the market share of Islamic banks and the development of financial intermediation, financial deepening, and economic welfare, particularly in low income or predominantly Muslim

countries and countries with a comparatively higher uncertainty avoidance index. Additionally, the results revealed that a greater market share of Islamic banks is associated with higher efficiency of conventional banks. Demetriades and Law (2004) tested whether the interaction between institutional quality and financial development has a separate positive impact on economic growth, over and above the effect of the levels of financial development and institutional quality. The result suggested that financial development has larger effect on growth when financial system is embedded within a sound institutional framework.

Frances et al (2015) conducted a study on the relationship between financial deepening and investment in Nigeria. Data used in the study were obtained from published sources for the period 1970-2013. The study adopted “the Gregor-Hansen Endogenous Structural break methodology”. The study also employed the Unit Root Test, Co Integration Test and Granger Causality Test. It discovered a unidirectional causality, running from financial deepening to investment. It also found that the financial deepening has a statistically significant impact on domestic investment. Based on the empirical findings, the study recommended increased integration of the credit and thrift societies, cooperatives, rural savings organizations, etc. into the mainstream formal financial sector in order to shore up the mobilization of savings for investment. It also recommended subsidizing the operational cost of financing intermediation so as to narrow the gap in interest rate spread.

Agbaeze and Onwuka (2014) applied the generalized least square model to investigate the effect of financial liberalization on investment in Nigeria. Data used in the study were obtained from published sources. „The study also adopted the cumulative sum and the cumulative sum square to verify for structural stability.” The findings of the study show that private sector investment has not improved following financial liberalization due to hostile macroeconomic environment. The study recommends “that government should promote monetary stability, ensure sound Macroeconomic environment and provide infrastructures to enable private investment to thrive in the economy”.

Eregha (2010) utilized the autoregressive and distributed lag model to investigate the relationship between interest rate and investment in Nigeria. Data used in the study were obtained from the Central Bank of Nigeria Statistical Bulletin and the National Bureau of Statistics for the period 1970-2002. The findings of the study suggest that “instability in interest rate played a negative and significant role in investment decision in the Nigerian economy”. The findings further show that ‘the demand for investment fund also negatively and significantly impact on interest rate in both the short run and long run’.

Nwosa and Emma-Ebere (2017) conducted a study on the “impact of financial development on foreign direct investment in Nigeria”. Data used in the study were obtained from the Central Bank of Nigeria Statistical Bulletin and World Banks’ World Development Indicators.

To analyze the data, the vector error correction model technique was employed. The findings of the study show that, in the long term, financial development negatively and insignificantly impact foreign direct investment, whereas, in the short term, it positively and significantly impacts foreign direct investment in Nigeria. The study recommends “further development of the Nigerian financial market by the monetary authorities stressing “its positive influence on the inflows of foreign direct investment in the short run”. It further recommends “the need for more financial reform of the Nigerian financial system in order to bring more foreign direct investment into the country”.

III. METHODOLOGY

The principal objective of this study is to examine the asymmetric cointegrating relationship for institutional quality, financial development and investment in Nigeria, the following estimation strategy was employed. First, the study examined the time series properties of the series using the augmented Dickey Fuller (ADF) and the Phillip-Perron (PP) unit root test. Second, if the variables were stationary in their first differences, the study proceeds by examining the long-run relationship between institutional quality, financial development, and Investment. Third, if cointegration is found then, the study uses the threshold autoregressive (TAR) and momentum threshold autoregressive (MTAR) models of Enders and Siklos (2001) as there could be some asymmetries in the adjustment process towards the long-run equilibrium. Fourth, if TAR and MTAR cointegration is not found and the model is symmetric, the study proceeds with the analysis of a standard VECM. On the contrary, given that there are asymmetries in the adjustment process towards the long-run equilibrium, the study then estimates a threshold VECM.

$$GFCE_t = f(LLB_t, MCAP_t, LAW_t, REQ_t, INVP_t) \quad (1)$$

$$GFCE_t = \beta_0 + \beta_1 LLB_t + \beta_2 MCAP_t + \beta_3 REQ_t + \beta_4 INVP_t + \mu_t \quad (2)$$

Where logarithm of Foreign Direct Investment (FDI). The independent variables are liquid liability as a percentage of the GDP (LLB), market capitalization as a percentage of the GDP (MCAP). The institutional variables are investment profile (INVP), Regulatory Quality (REQ), and law and order (LAW). The specified model in equation (1) is tested for a long-run relationship. After estimating the model, the obtained residuals series are subjected to a unit root test that is of the form:

$$\Delta \epsilon_t = \sigma \epsilon_{t-1} + v_t \quad (3)$$

Where ϵ_t is the residuals from equation (1) and assumed to be purely white noise with a zero mean and a constant variance while v_t is an independent and identically distributed disturbance with zero mean. If the null hypothesis of $\sigma = 0$ can be rejected, then ϵ_t is stationary. The model in equation (2) assumes a symmetric adjustment process and, therefore, change in $\Delta \epsilon_t$ is ϵ_{t-1} regardless of whether is positive or negative. However, if inclusive growth, institutional quality and financial development show

asymmetric adjustment behavior, therefore, the model in equation (2) is misspecified. Enders and Siklos (2001) proposed two tests of asymmetries; a threshold autoregressive (TAR) model and a momentum threshold autoregressive (MTAR) model. Following Enders and Siklos (2001) two different hypotheses can be tested. The TAR model is given as:

$$\Delta \epsilon_t = I_t \sigma_1 \epsilon_{t-1} + (1 - I_t) \sigma_2 \epsilon_{t-1} + v_t \quad (4)$$

Where I_t is the Heaviside indicator such that:

$$I_t = \{1 \text{ if } \epsilon_{t-1} \geq T\}$$

$$\{1 \text{ if } \epsilon_{t-1} < T\} \quad (5)$$

Where T is the value of the threshold and it is endogenously determined using the Chan (1993) technique. The method arranges the values of ϵ_t and $\Delta \epsilon_t$ for the TAR and the MTAR models, respectively, in ascending order and exclude the smallest and the largest 15 percent, making consistent estimate which yields the smallest residual sum of squares over the remaining 70 percent.

The MTAR model takes the following form:

$$\Delta \epsilon_t = M_t \sigma_1 \epsilon_{t-1} + (1 - M_t) \sigma_2 \epsilon_{t-1} + v_t \quad (6)$$

Where M_t is the Heaviside indicator such that:

$$M_t = \{1 \text{ if } \Delta \epsilon_{t-1} \geq T\}$$

$$\{1 \text{ if } \Delta \epsilon_{t-1} < T\} \quad (7)$$

The necessary condition for the stationarity of ϵ_t is that $\sigma_1 < 0$, $\sigma_2 < 0$ and $(1 + \sigma_1)(1 + \sigma_2) < 1$. If ϵ_{t-1} is above the long-run equilibrium value, then adjustment is at the rate of σ_1 , but if ϵ_{t-1} is below the long-run equilibrium value then adjustment is at the rate of σ_2 . However, adjustment is symmetric if $\sigma_1 = \sigma_2$. Therefore, where the null hypothesis $H_0: (\sigma_1 = \sigma_2)$ is rejected, then the TAR model can be used to capture the signs of the asymmetries. The MTAR model is useful when the adjustment exhibits more momentum in one direction than the other. That is, the speed of adjustment depends on whether ϵ_{t-1} is increasing or decreasing. If $|\sigma_1| < |\sigma_2|$, then increases in $\Delta \epsilon_{t-1}$ may tend to persist, whereas decreases revert back to the threshold are done quickly.

Enders and Siklos (2001) proposed two sets of tests to test the null hypothesis $H_0: \sigma_1 = \sigma_2$ in equation (3) for both the TAR and MTAR models. The f -statistic does not follow the standard distribution, consequently, $\hat{\sigma}_u$ from the estimated TAR model is compared with $\hat{\sigma}_u^*$ for the MTAR model provided in Enders and Siklos (2001). Since there is no presumption whether to use TAR or MTAR model, the recommendation is to use the information criteria to determine the better model among the two. If the residuals in equations (4) and (5) are serially correlated, they are:

$$\Delta \epsilon_t = I_t \sigma_1 \epsilon_{t-1} + (1 - I_t) \sigma_2 \epsilon_{t-1} + \Sigma \beta_1 + \Delta \epsilon_{t-1} \quad (8)$$

$$\Delta E_t = M_1 \sigma_1 E_{t-1} + (1-M_1) \sigma_2 E_{t-1} + \sum \phi_1 + \Delta E_{t-1} \tag{9}$$

Model in equation (8) represents the new TAR model while the one in equation (9) is the modified MTAR model, respectively. The asymmetric version of the error correction model (ECM) is formulated as equation (10) and (11).

The ECM represented by the parameters σ_{1t} captures the speed of adjustments back to the equilibrium. The speed of adjustment for any positive deviation from long-run equilibrium (depending on the attractor indicator) is denoted by σ_{11} . In the same vein, the of speed of adjustment of any negative deviations as defined by the attractor indicator, is known as σ_{12}

IV. DESCRIPTIVE STATISTICS

Table 1 contains the summary statistics for all the variables, showing that Gross Capital Fixed Formulation overtime with its minimum value being 35.63058. In addition, MCAP, Domestic credit to the private sector and LLB as a percentage of the GDP have a mean of 9.376923, 9.376923 and 16.42330 percent. It was also shown that all the variables were not constant particularly the institutional variables of investment profile 17.07231, REQ with the value of 7.048323, thus, the need to check for the order of integration of the series. The standard deviation of all the variables also suggests that they were not different from their means. In addition, the study found that the Jarque-Bera statistic for five of the variables included in the model were non-normal, this further suggest the rationale for the use of asymmetric cointegration. Prior to checking the order of integration of the series, the study also examined the degree of association between the explanatory variables and the dependent variable using the correlation coefficient.

Table 1 Descriptive Statistics for Inclusive Growth, Institutions and Financial Development

	GCFF	DCPS	IP	LLB	MCAP	REQ
Mean	35.63058	9.376923	17.07231	16.42330	9.376923	7.048323
Median	33.10736	8.234514	17.92818	13.52693	8.234514	5.975124
Maximum	89.38613	19.62560	27.65994	27.37889	19.62560	19.90521
Minimum	14.16873	4.957522	0.000000	9.063330	4.957522	0.000000
Std. Dev.	18.96943	3.547222	6.744360	5.834460	3.547222	6.121829
Jarque-Bera	9.541464	8.272259	16.88411	5.108472	8.272259	2.922119
Probability	0.008474	0.015985	0.000216	0.077752	0.015985	0.231990
Observations	41	41	41	41	41	41

From Table 2, credit to private sector as a percentage of the GDP (CPS), liquid liability as a percentage of the GDP (LLB), market capitalization as a percentage of the GDP (MCAP), Regulatory Quality (REQ) and investment profile (IP) have negative association with Gross Capital Fixed Formulation (GCFF). Meanwhile liquid liability as a percentage of the GDP (LLB), market capitalization as a percentage of the GDP (MCAP), Regulatory Quality (REQ) and investment profile (IP) have positive association with Credit to Private Sector (DCPS) in Nigeria.

Table 3 (see Appendix-I) presents the unit root tests. Using the augmented Dickey– Fuller test (ADF), and the Phillips and Perron test (PP), the reported results indicate that the null of unit root could not be rejected on the series

levels but were rejected in their first difference, thus paving way to test for cointegration.

Subsequently, linear cointegration tests were conducted on the estimated model specified in equation (1), using the Johansen cointegration test the results in Table 4 (see Appendix-II) show that there is a long-run relationship between the Investment, institutional quality, and financial development in Nigeria, thus, the null of no cointegration was rejected. The estimated cointegrating vector is positive for market capitalization, while liquid liability, Regulatory Quality and investment profile were negative. This result is quite interesting. For instance, the coefficient for level of Investment Profile will have a positive relationship with Gross Cap

Table 2 Correlation Matrix

	GCFF	DCPS	IP	LLB	MCAP	REQ
		-	-	-	-	-
		0.6920002781	0.8432736296	0.6646096219	0.6920002781	0.7924468019
GCFF	1	917628	997824	906477	917631	690539
	-					
	0.6920002781		0.5684980272	0.8176886022		0.7499143469
DCPS	917628	1	491077	567518	1	523458
	-					
	0.8432736296	0.5684980272		0.6446292601	0.5684980272	0.6195127544
IP	997824	491077	1	055632	491078	517311
	-					

	0.6646096219	0.8176886022	0.6446292601		0.8176886022	0.6706354624
LLB	906477	567518	055632	1	567518	448472
	-					
	0.6920002781		0.5684980272	0.8176886022		0.7499143469
MCAP	917631	1	491078	567518	1	523458
	-					
	0.7924468019	0.7499143469	0.6195127544	0.6706354624	0.7499143469	
REQ	690539	523458	517311	448472	523458	1

(Source : Authors" Compilation).

Ital Fixed Formulation when it is written in equation form. This suggests that with increasing level Investment profile in Nigeria Gross Capital Fixed Formulation will increase by -1.643020. The institutional quality variable of Regulatory Quality has negative impact on Gross Capital Fixed Formation. This suggests that the observance of regulatory quality in Nigeria is low and it thus has negative consequences on the Nigerian economy.

Table 5 in the Appendix-III presents the results for the estimated TAR and MTAR models. The estimates of ρ_1 and ρ_2 are negative, which is expected for the stationarity of the error term. The TAR model's results suggest that there is no evidence of asymmetric cointegration as the null hypothesis of $H_0: (\rho_1 = \rho_2 = 0)$ was not rejected at a 1 percent level of significance, with a statistic of 4.35. This implies that there is no evidence of a significant long-run relationship between investment, institutional quality and financial development (liquid liability) under asymmetric adjustment.

Furthermore, the null hypothesis of symmetric cointegration, $H_0: (\rho_1 = \rho_2)$, with a value of 0.686, could not be rejected at any level of significance. This suggests that there is no evidence of a significant long-run relationship between investment and financial development (liquid liability) and institutional quality under symmetric adjustment. The absolute value of ρ_1 is greater than the absolute value of ρ_2 (0.573 is greater than 0.481), indicating that investment is quicker upward than downward. This suggests that the adjustment process is faster when the liquid liability is declining compared to when it is increasing. Overall, the results suggest that there is no evidence of significant long-run relationship between investment, institutional quality and liquid liability under both symmetric and asymmetric adjustment. However, the adjustment process is faster when the financial development (Liquid liability) is declining compared to when it is increasing.

The MTAR model results reveal that the autoregressive decay estimates, ρ_1 and ρ_2 , have negative signs, as expected for stationarity of the error term. The test for asymmetric cointegration for the null hypothesis of $H_0: (\rho_1 = \rho_2 = 0)$ was rejected at the 1 percent level of significance, with a value of 11.393, indicating that there is evidence of asymmetric cointegration between investment and financial development (Liquid liability) and institutional quality. This suggests that the adjustment process is different when the financial development (Liquid liability) is increasing compared to when it is decreasing.

Similarly, the null hypothesis of symmetric cointegration, $H_0: (\rho_1 = \rho_2)$, with a f-statistic of 9.753, was rejected at the 1 percent level of significance. This indicates that there is evidence of a significant long-run relationship between investment and financial development (Liquid liability) and institutional quality under asymmetric adjustment.

The absolute value of ρ_1 is greater than the absolute value of ρ_2 (0.540 is greater than 0.462), indicating that investment is quicker upward than when it is reducing. This suggests that the adjustment process is faster when financial development (Liquid liability) and institutional quality is declining compared to when it is increasing. The results from the MTAR model are consistent with the Johansen and Engle-Granger test, indicating that there is evidence of a significant long-run relationship between investment and financial development (Liquid liability) and institutional quality under asymmetric adjustment. Additionally, the adjustment process is faster when income inequality is declining compared to when it is increasing.

It is clear from the reported TAR and the MTAR results that all the conditions are fulfilled in the MTAR model, that is, there is the presence of non-linear cointegration, the null hypothesis $H_0: (\rho_1 = \rho_2 = 0)$ was rejected and the null hypothesis $H_0: (\rho_1 = \rho_2)$; of symmetric adjustment were also rejected.

The implication of this is that adjustment is asymmetric for Investment, institutional quality and financial development in Nigeria and that the MTAR specification has superior power properties than the Engle-Granger or any other linear cointegration test.

The reliability of the estimates was ascertained using the Ramsey's RESET statistics for linearity, the Lagrange multiplier (LM) serial correlation test, the Breusch-Pagan-Godfrey (BPG) test for Heteroscedasticity, Jarque-Bera test for non-normality and the cumulative sum (CUSUM) and cumulative sum of square (CUSUMSQ) stability tests. The five tests revealed that the successive error terms of the estimated model are not correlated, the model was correctly specified, the disturbance terms are homoscedastic, the estimated model follows a normal distribution and that the estimated model is stable.

Since cointegration exists and also that each cointegrating relationship is described by asymmetric adjustment, then asymmetric error-correction models for the relationship was estimated. These are reported in Table 6

(see Appendix-IV). The results in Table 6 report the point estimates of ρ_{11} and ρ_{12} , which determines the speed of adjustment for positive and negative deviations for long-run relationship between investment and financial development (Liquid liability) and institutional quality. Results further showed that estimates of ρ_{11} and ρ_{12} adjust back to equilibrium. However, the t-statistic for the error correction indicates that the investment adjusts to both positive and negative discrepancy. The result also shows that the investment adjusts faster in the positive discrepancy than the negative one. The adjustment mechanism shows that when investment is rising, deviations from equilibrium are corrected at a higher rate; about 54.8 percent of the deviations are corrected yearly while about 25.1 percent of the deviations are corrected yearly when investment is falling.

The fact that a poor regulatory environment and unfavorable investment profile can discourage investors from investing in the country. Such factors can create uncertainty and increase the risks associated with investing in Nigeria, which can lead to a reduction in investment. In addition, a poor regulatory environment can lead to increased bureaucratic procedures, corruption, and rent-seeking, which can further discourage investment in the country.

The negative relationship between regulatory quality and investment profile with investment suggests that improving these factors could have a positive impact on investment in Nigeria. Enhancing regulatory quality and improving the investment profile can reduce uncertainty, lower transaction costs, and improve the ease of doing business in Nigeria. This can attract more domestic and foreign investment, leading to increased economic growth and development in the country. The results suggest that addressing regulatory quality and investment profile is crucial for attracting investment in Nigeria and promoting inclusive economic growth in the country.

➤ *Hypothesis Testing*

Testing the research hypotheses of the study, both the long-run and the short-run estimates reported in Tables 4 and 6 were used. The first hypothesis (H01) states that financial development and Institutional variables employed does not increase the level of investment in Nigeria. From the cointegrating vector reported in Table 4 for the Johansen cointegration test and the vector error correction model reported in Table 6. There is evidence that the proxy of financial development (credit to the private sector, liquid liabilities, and market capitalization) have positive relationship with inclusive growth. Thus, the null is rejected and the alternative hypothesis that financial development increases the level of investment in Nigeria is accepted. This result is in conformity with the work of Abedifar et al. (2016), Law et al. (2013), and Peia and Roszbach (2015) who found that financial development accelerates the level of growth.

➤ *Hypothesis Two (H02)*

States that institutional quality does not improve the level of investment in Nigeria. Table 4 and 6 show the evidence that the proxy of institutional quality (investment profile and regulatory quality) has positive and significant relationship with investment in Nigeria. Thus, the null hypothesis that institutional quality does not improve the level of investment in Nigeria is rejected, while the alternative hypothesis that institutional quality improves the level of inclusive growth in Nigeria is accepted. This result is in line with Demetriades and Law (2004), Garretsen et al. (2004), and Law et al. (2013) who found that institutional quality enhances the level of growth.

V. DISCUSSION

The findings of this study shed light on the relationship between institutional quality, financial development, and investment in Nigeria. The results show that there is evidence of both symmetric and asymmetric cointegration between these variables. Using symmetric cointegration, the study found a long-run cointegrating relationship between institutional quality, financial development, and investment. This finding supports Ferrini (2012) argument that institutions play a critical role in driving economic growth by reducing the costs of economic transactions, contract enforcement, and increasing the availability of information. These factors, in turn, reduce risk and uncertainty, which ultimately fosters economic growth.

The study also found evidence of an asymmetric cointegrating relationship between institutional quality, financial development, and investment. This result further supports the institutional hypothesis and is consistent with the conclusion reached by Alexious et al. (2014), who identified the quality of the institutional environment as a crucial factor in defining economic prosperity.

In addition, the study found that investment adjusts faster in the positive discrepancy than the negative one. This result is in line with Law and Singh (2014) research, which discovered a threshold effect in the finance-growth relationship. They argue that beyond a certain level of financial development, further development tends to have an adverse effect on economic growth. Thus, they suggest that an optimal level of finance is more crucial for economic growth.

This study's findings provide valuable insights into the complex relationship between institutional quality, financial development, and investment in Nigeria. These findings could have significant implications for policymakers seeking to promote sustainable economic growth in the country.

VI. CONCLUSION

The purpose of this study was to investigate the connection between investment, institutional quality, and financial development in Nigeria. To accomplish this, the study employed the threshold autoregressive (TAR) and momentum threshold autoregressive (MTAR) models developed by Enders and Siklos (2001), which can account for non-linearity and asymmetric adjustment between the variables. The findings reveal that there are asymmetries in the relationship between investment, institutional quality, and financial development in Nigeria, which is consistent with the institutional quality hypothesis. This is not unexpected given that financial development and growth are typically ad hoc, and the financial markets are not yet fully developed in Nigeria.

Furthermore, the symmetric cointegration tests of Engle and Granger, and Johansen indicated the presence of a long-term relationship between investment, institutional quality, and financial development in Nigeria. However, the TAR and MTAR models were employed, and it was found that the long-term relationships between the variables were better captured by the MTAR model. The results from the MTAR model suggest that an asymmetric cointegrating relationship exists in Nigeria, and the asymmetric error correction term indicates that investment adjusts to both positive and negative discrepancies. Additionally, the economic structures of Nigeria may be a contributing factor to the asymmetric adjustment observed in the results.

RECOMMENDATIONS

The Nigerian government should put financial inclusion policies in place by directing through the Central Bank that commercial banks should expand their scope of operation, having more branches in the rural area so as to make finance readily available to investors.

Secondly, government should improve on policies aim at curtailing sharp practices in financial markets. It is only when corruption is minimised that Foreign direct investment and Domestic investments could be enhanced.

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