Financial efficiency, exchange rate variation and investment growth in Nigeria

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DOI: https://dx.doi.org/10.47772/IJRISS.2023.7012032

Received: 18 November 2023; Accepted: 27 November 2023; Published: 30 December 2023

ABSTRACT

The study investigates the influence of financial efficiency, exchange rate variation, economic performance, trade, and population growth in Nigeria by utilizing the ARDL technique from 1980 to 2022. The result of the stationarity test reveals all the variables are stationary and the bound test illustrates a long-run relationship among the variables in the study's model. The outcome of the short-run analysis shows financial efficiency, economic progress and trade accelerate the level of investment growth in Nigeria. Nonetheless, the population level does not influence investment growth. The long-run estimates illustrate that financial efficiency, economic growth, trade and population have a positive and significant influence on investment growth in Nigeria. However, exchange variation decreases the level of investment growth in the country. Therefore, the study suggests financial reform policies through effective and efficient credit facilitates to the citizens from both central and conventional banks in the country. In addition, effective monetary policies should be embarked on to regain the naira value against the foreign currency to promote investment level right from the nation's domestic investors.

Keywords: Financial efficiency, exchange rate variation, investment growth, Nigeria, ARDL

INTRODUCTION

Recently, global nations have intensified all avenues to accelerate the growth of investment (Nepal, Park, & Lee, 2020). According to the World Bank (2020), the growth rate of investment among the world's nations has increased to almost 2 % in the last few years. It is argued that the accelerated trend on the investment level has translated into the rise of employment level, production and welfare of the people in the global economies World Bank (2023). IMF (2020) estimated that an over 30% rise in the foreign in various countries was discovered in the last decade. This facilitates the increase in global foreign investment, labour transformation, transfer of technologies, and knowledge among nations Irina-Raluca (2018). Despite the outbreak of the global pandemic of COVID-19 and the resulting variability of exchange rate and financial instability, investment has increased to a significant level in most of the countries of the world Grasselli (2021). This was due to the urgent and several economic strategies that were put in place to assimilate the effects of the pandemic. Similarly, in developing economies, African countries' investment trend is still on a positive trend (World Bank, 2023). The investment flow in the continent has reached $83 billion and West Africa has share of investment growth increased by 48% to $14 billion UNCTAD (2023). It is stressed that the GDP growth is appreciated in most of the nations in the continent as the value of investment accelerated UNCTAD (2023).

In Nigeria, the level of investment growth has doubled by $4.8 billion in 2022 UNCTAD (2023). The indicators of investment growth have shown a positive sign revealing progress in the investment level of the country. CBN (2022) illustrated that the nation has recorded about a 0.8% annual rate of increase in the investment of the nation. Similarly, the GDP annual growth in Nigeria has indicated an accelerating trend for more than a decade. In this development, the exchange rate in the country has shown a positive track and keeps increasing in most of the foreign currency against naira (CBN, 2013). For instance, the exchange rate

between the naira and the United States American dollar is constantly increasing at a speedy rate from 219 to 1000 naira for one dollar from 2015 to 2023 (CBN, 2013). Moreover, the trend in financial development in the nation also moved in a positive direction for many years. This was achieved due to the nation's efforts on financial reform policies for financial efficiency, effectiveness, and growth. Despite this progress, the country still faces high levels of poverty, increasing unemployment rate, insecurity, poor welfare and hardship (Olowookere, Olanipekun, Sokunbi, & Aderemi, 2022). In this regard, the nature of the frequent exchange rate variation of the foreign currency against the naira and financial instability have become major concerns in the current time and might be linked with the deteriorating impact of the investment growth on poverty, welfare, employment and security conditions in the nation. Hence, the study examines the influence of financial efficiency and exchange rate variation on investment growth in Nigeria. Several past studies have examined the effect of financial development, and exchange rates on investment mostly in developed economies, however, very few have been done in developing nations particularly, Nigeria. Similarly, the measurement of financial efficiency utilized in this study was not been investigated by the previous studies. Therefore, this may differ the current study from other studies in the literature.

LITERATURE REVIEW

Relationships among financial efficiency, exchange rate variation and investment growth have been analyzed in the literature. For example, Ali et al. (2019) examine the influence of financial efficiency on investment performance in Asian economies, using FMOLS and DOLS estimation techniques from 1982 to 2014. The study finds that financial efficiency positively influences investment growth. Pradhan, Arvin, and Hall (2019) stressed that financial efficiency accelerates the level of investment growth in G-20 nations from 1970 to 2016. The study utilizes the VECM technique for the model estimation. Osei and Kim, (2020) studied the effect of promoting financial efficiency on investment in 62 middle and high-income nations by employing a threshold model from 1987 to 2016. The study outcome shows that financial efficiency accelerates the level of investment and the GDP growth rise to almost 95.6%. Similarly, Cheng, Chien, and Lee (2020) examine the impact of financial progress and technological innovations on growth performance in 72 nations from 2000 to 2015, using a GMM method of estimation. The result reveals that financial performance increase the level of investment growth.

Song, Chang, and Gong, (2021) utilized a panel data technique to analyze the influence of financial progress, and corruption on investment growth, using a sample of 142 countries. The outcome of the study reveals that financial progress through strategic reform policies promotes investment growth in these nations. Khan, Chenggang, Hussain, and Kui, (2021) investigated the impact of financial efficiency, technological innovation, energy and investment growth performance in 69 nations of the world from 2000 to 2014. The finding shows that financial efficiency positively promotes investment growth. Kihombo, Ahmed, Chen, and Adebayo, (2021) studied the influence of financial development and technology on investment growth in West Asia and Middle East countries from 1990 to 2017. The outcome of the study shows that financial development promotes investment growth in these nations by almost 0.0016%. Ye, Al-fadly, Huy, and Ngo, (2022) emphasized the need for green finances that would better promote investment in the global nations, especially with the effects of the COVID-19 pandemic.

However, Avdjiev, Bruno, Koch, and Song, (2019) stressed that exchange variation, especially the dollar exchange rate seriously affects global investment negatively. Similarly, Ribeiro, McCombie, and Tadeu, (2019) examine the influence of exchange rate variation on investment growth in developing nations. The study finds that exchange rate variation devaluates currency and hence, decreases the level of investment growth. Ma (2020) used a panel of 49 developing countries from 1993 to 2016 to study the effect of exchange rate variation on investment. The study reveals exchange rate changes significantly reduce investment growth. Zeng, Zhao and Liu (2022) investigate the effect of exchange rate variation on investment growth in China. The outcome reveals that exchange rate variability reduces the level of

investment growth in China.

Based on the reviewed literature, a relationship exists between financial efficiency, exchange rate and investment growth. However, most of these were found in developed countries with very few in developing nations, more specifically Nigeria. Moreover, the measurement utilized in this study on financial efficiency was not investigated. Hence, the study examines the influence of financial efficiency, exchange rate variation and investment growth in Nigeria.

METHODOLOGY

It is essential to illustrate the methods applied for the model validation. Hence, this section discusses the data, technique of estimation and empirical model specification of the study.

Data and measurements

The model variables of the study include investment growth (FDI inflow) financial efficiency (domestic credit to the public % GDP), exchange rate variation (variation in value of the local currency compared to previous time against US dollar), trade (sum of total export and import), economic performance (annual GDP growth), and population (annual rate of growth of the population). All the variables were captured on annual time series bases from 1980 to 2022, obtained from the World Bank database (WDI, 2022).

Model specification

The study used a changed version of Dogan and Turkekul's (2015) model for the association between investment growth and other variables as indicated in Equation 1

ING = f (FE, EV, EG, TD, POP) (1)

In equation 1, FE, EV, EG, TD, and POP represent investment growth, financial efficiency, exchange rate variation, economic performance, trade, and population, respectively. This study used Autoregressive Distributed Lag (ARDL) for the model estimation proposed by Pesaran et al. (2001). This model is illustrated in the following equations:

$$\Delta LING = \beta_0 + \sum_{j=1}^{n} \beta_1 LING_{2t-j} + \sum_{j=0}^{n} \beta_2 LFE_{t-j} + \sum_{j=0}^{n} \beta_3 LEV_{t-j} + \sum_{j=0}^{n} \beta_4 LEG_{t-j} + \sum_{j=0}^{n} \beta_5 LTD_{t-j} + \sum_{j=0}^{n} \beta_6 LPOP_{t-j} + \alpha_1 LFE_t + \alpha_2 LEV_t + \alpha_3 LEG_t + \alpha_4 LTD_t + \alpha_5 LPOP_t + \varepsilon_t \quad (2)$$

$$LING = \alpha_0 + \alpha_1 LING_t + \alpha_2 LFE_t + \alpha_3 LEV_t + \alpha_4 LEG_t + \alpha_5 LTD_t + \alpha_6 LPOP_t + \varepsilon_t \quad (3)$$

In the above equations, ε represents the error term, t designates the time trend and Δ denotes the first difference operator.

RESULT

The findings of the study are discussed in this part segment in which the variables were initially subjected to unit root test to ensure the stationarity of the variables of the model, using Augmented Dickey-Fuller.

Table 1 presents the outcome of the stationarity test of the variables of the model. All the variables are found stationarity with a mixed nature of stationarity status of level and first difference. However, none of these variables are found in the second difference, hence ARDL bound test technique is valid to apply for the estimation. The bound test outcome confirms the long-run association as the value of F-statistic 5.971890 is higher than the upper-bound test critical values of I(0) 3.74 and I(1) 5.06 at a 1 percent level of significance.

Table 1 Result of the stationarity test

Variables	ADF(level)		first difference	
LING	-2.469103*	(0.0002)	–	
LFE	-4.826810*	(0.0005)	–	
LEV	-6.278015	(0.4510)	-3.732101*	(0.0001)
LGE	-4.742090	(0.7019)	-6.108722*	(0.0000)
LTR	-2.816731	(0.4918)	-2.872015*	(0.0000)
LPOP	-1.736952	(0.1964)	-4.865021*	(0.0000)

Notes: * Illustrates statistical significance at a 1 percent level

Table 2 presents the estimated result of the short and long-run analysis. The outcome of the short-run estimates shows that financial efficiency, economic growth performance, and trade positively influence the level of investment growth in Nigeria. This implies that a % change in financial efficiency, economic performance, and trade leads to an increase in the level of investment growth by 2.1, 1.3 and 0.6 % respectively. Nevertheless, exchange rate variation reduces the level of investment and population is not significant in determining investment level. The speed of adjustment towards long-run equilibrium is almost 81.24 percent, and it is significant at one percent.

Furthermore, the long-run analysis indicates that financial efficiency, economic progress, trade and population significantly increase the level of investment growth in Nigeria. This means that a % increase in financial efficiency raises the capacity of investment growth by 3.2 %. It clearly shows that financial efficiency is associated with an increase in investment in the country by 3.2% annually. This result is justified by the outcome of the study (Adu, Marbuah, & Mensah, 2013). Similarly, the findings reveal that economic performance, trade and population growth accelerate the level of investment growth in the country by 2.2, 0.7 and 1.2 % respectively. However, a % change in exchange variation results in to increase in investment growth by 1.5% in Nigeria. It shows that exchange variation negatively reduces investment growth.

Table 2: estimated outcome

S.R Regressors	Coefficients	SD Errors	t-Statistics	Prob
ΔLFE	2.107826*	0.397015	-4.746291	0.0000
ΔLEV	-0.869510*	0.610854	-2.762410	0.0001
ΔLGE	1.392601**	1.401792	-0.184526	0.0400
ΔLTR	0.672541**	1.286509	-0.207627	0.0038
ΔLPOP	0.301262	1.387192	-0.497251	0.2026
ECT(-1)	-0.812411*	0.490163	-4.475871	0.0002
L.R Regressors				
LFE	3.296430*	0.796013	0.0956421	0.0000
LEV	-1.53295**	0.209711	-0.690261	0.0021
LGE	2.237602**	1.397620	1.4290172	0.0041
LTR	0.704301	1.836021	1.6836103	0.0054
LPOP	1.209452*	1.602480	1.270341	0.0005
C	-41.076964	12.770345	-1.870257	0.0052

*Notes: * and ** represent statistically significant at 1 and 5 percent levels*

Table 3 Post Estimation Checks

Test Type	F-statistics	Probability	Result
Breusch-Pagan Test.	1.318952	0.1842	No Heteroskedasticity
Breusch-Godfrey Test	0.478101	0.2973	No Serial Correlation
Jarque-Bera	1.620915	0.1935	Normally Distributed

Table 3 indicated that the post-estimation checks reveal no Heteroskedasticity, or serial correlation and the errors are normally distributed.

CONCLUSION

The study investigates the influence of financial efficiency, exchange rate variation, economic performance, trade, and population growth in Nigeria by utilizing the ARDL technique from 1980 to 2022. The result of the stationarity test reveals all the variables are stationary and the bound test illustrates a long-run relationship among the variables in the study's model. The outcome of the short-run analysis shows financial efficiency, economic progress and trade accelerate the level of investment growth in Nigeria. Nonetheless, the population level does not influence investment growth. The long-run estimates illustrate that financial efficiency, economic growth, trade, and population have a positive and significant influence on investment growth in Nigeria. However, exchange variation decreases the level of investment growth in the country. Therefore, the study suggests financial reform policies through effective and efficient credit facilitates to the citizens from both central and conventional banks in the country. In addition, effective monetary policies should embark to regain the naira value against the foreign currency to promote investment level right from the nation's domestic investors Nevertheless, the study is limited by the inability to use some factors that might influence investment growth in the country like energy resources and environmental factors. Consequently, future studies should incorporate these variables to enhance the analysis and recommendations.

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