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A Comparative Assessment of the Contribution of Foreign Direct Investment to Economic Development of Nigeria and Ghana

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Abstract: Generally, sub-Saharan countries suffer setbacks in regard to capital accumulation necessary to sponsor investment demands, thus promoting economic development. As a result, they look out for foreign sources such as foreign direct investment (FDI) to augment the investment-saving gap. Recently, due to global shake-ups and uncertainty, there has been a drastic fluctuation in the level of FDI inflow into the West African sub-region, especially in the two giant economies of Nigeria and Ghana. This attracted the attention of this research work. Thus, this study comparatively reassesses the contribution of FDI inflow to the economic development of these giant economies from 1980 to 2020 to determine which one of them benefits the most given the fluctuation in FDI inflows. The outcome reveals that FDI inflows have a significant influence on the economic development of both economies. In Nigeria particularly, evidence shows a strong positive correlation between FDI and Gross Domestic Product Per Capita (GDPPC), implying that the Nigerian economy is investment-driven in the period under consideration. Essentially, the Nigerian economy can achieve its desired development with FDI support. Similarly, findings indicate that FDI inflows into Ghana have a strong positive impact on economic development. Thus, a recommendation is made for the Ghanaian government to source more foreign resources by opening her economic borders wide for global integration. Pursuance of trade liberation policy for the purpose of attracting more foreign resources is critical to the attainment of sustainable economic development in both economies. Policy actions enabling stable macroeconomic conditions and a peaceful environment for smooth investment operations are key factors guaranteeing economic development.

Keywords: foreign direct investment, trade openness, economic development, gross national income

JEL: F21, F43, O55

1. Introduction

The developing economies are generally characterized with the problem of inadequate capital formation to meet up with the domestic investment demand. This is mainly linked to low income, poor saving attitude and high rate of inflation militating against economic progress in these countries (Güngör & Ringim, 2017). To close this saving-investment gap, most of these nations resort to sourcing resources from foreign economies in the form of external loans,

foreign direct investment, foreign aid, and so on. These inflows of foreign capital are expected to play a complementary role to their domestic counterparts in helping to resolve economic distress in the recipient countries. The MacDougall-Kemp Hypothesis, as developed by MacDougall (1958) and subsequently expounded by Kemp (1964), lent support to the above assertion. The hypothesis maintained that the host country will experience an increase in national income as a result of an increase in the quantum of investment occasioned by the capital inflows. The empirical work of Anowor et al. (2013) also subscribed to the potency of FDI inflow into the recipient country.

On the contrary, the dependency theory holds the view that FDI inflow has exploitative tendencies and therefore cannot benefit the host economy. The theory clearly asserts that foreign companies investing in the host economy have the potential to cause capital flight from the recipient country by repatriating their profits to their home country. According to dependency theorists, this is capable of slowing down the process of capital formation, thereby limiting the path of economic advancement. Oyedokun and Ajose (2018), as well as Ikpesu (2019), in their separate studies, place more value on domestic investment over its foreign counterpart. They argue that domestic investment allows for the practical use of a nation's native assets and capital, which appears to be more manageable and regulated than foreign capital and investment (Kalu & Mgbemena, 2015). Also, a persistent increase in the productivity of domestic firms can generate the expected output for export markets, thereby increasing the foreign earnings of the same economy. This, in turn, contributes to the total capital formation of the country of origin and also serves as a foreign investment source to other countries (Alfa & Garba, 2012). Furthermore, it has been argued that although foreign direct investment (FDI) is beneficial to host countries by speeding up the process of economic growth and development, its multiplier effect is greater (Uremadu, 2006; Nakpodia et al., 2018). In other words, developing countries cannot afford to rely solely on foreign direct investment; they should depend on domestic investment rather than FDI.

In Africa, FDI inflows witnessed a relative increase from US $38 billion in 2017 to US $40 billion in 2018, with a diversification of the inflow from natural resource-dominated economies to well-diversified economies like Egypt (UNCTAD, 2019). This resulted in a serious reduction of FDI inflows to some economies like Nigeria, which experienced economic downturns in 2015, 2018, and 2020. Subsequently, FDI inflow to the West African sub-region as a whole suffers set back as a result of the economic recession experienced by the giant's economy of the sub-region-Nigeria. Thus, on the other hand, the Ghanaian economy gains an advantage from the economic distress experienced in Nigeria, thereby attracting more FDI inflows than Nigeria. Record has it that the Ghanaian economy took over the leader position of the sub-region from Nigeria (UNCTAD, 2019). Ghana recorded US $3.3 billion FDI inflow in 2018 ahead of the Nigeria economy which achieved only US $2.2 billion in the same year. Now, the salient research question begging for urgent answer is that: who gain and who loses between Nigeria and Ghana from the recent fluctuation in FDI inflow into the sub-region? For the purpose of avoidance of presumption, this study set out to investigate the impact of FDI inflow comparatively between the two giants' economies of the sub-region. Secondly, most study have been centered on single country study except for very few like Iheanachor and Ozegbe (2021), Dankwa et al. (2018), Ezekiel et al. (2018). Besides, these studies adopted the same method-the ordinary least square (OLS) method which maybe deficient to make final conclusion on the subject matter. The work of Iheanachor and Ozegbe (2021) suggested that future study should adopt more sophisticated method like the Autoregressive Distributed Lag (ARDL), Vector Error Correction Model (VECM) and so on. Thus, in a bid to cover the methodology gap, this study will leverage the more superior and dynamic ARDL method, which has some advantages over the OLS. For instance, ARDL could determine both the short run and long run relationship between the variables, as well as the determination of cointegration in the studied area. Finally, the time frame gap is also covered in this study. Most of the previous studies ended their analysis in 2016 which failed to cover the recent period that attracted the attention of this research work-the period that witnessed massive fluctuation of FDI inflow into the sub-region. Thus, the outcome from this study is expected to serve as a road map to these economies as well as the other economies in the sub-region.

2. Review of empirical literature

Over the decades now yet the research world could not conclude on the role of FDI inflow on economic advancement. While some study lent their support to the positive effect of FDI inflow, other contended with it. For instance, Nketsiah and Quaidoo (2017) examine the impact of FDI inflow on economic growth in Ghana from 1983 to

2012. The outcome shows that FDI inflow is key to achieving economic growth in the country. Joshua (2019) examines the relationship between FDI inflow and GDP in Nigeria and found that there exist a cointegration in the economy and that FDI influences growth process positively. This is not different from the work of Joshua et al. (2020). The study concludes that FDI inflows into the South African economy exert a positive and significant impact on economic growth in the long run. Awunyo-Vitor and Sackey (2018) examined the impact of FDI inflows on the agriculture sector in Ghana. The results reveal that FDI inflows promote the output of the sector, which is in line with the findings of Andinuur (2013) for Ghana. Nkechi (2013) examines the impact of FDI inflow on economic growth of Ghana from 1970 to 2011 and found that FDI inflow promotes the export sector which cement the work of Antwi et al. (2013) and Ato-Mensah and Long (2021) both for Ghana. On the other hand, Antwi and Zhao (2013) examine the relationship between FDI inflow and economic growth in Ghana in 2013 and found that the two variable are negatively corrected. Similarly, trade openness has been seen as an agent that drives economic growth. Although this assertion has been rejected by some scholars, empirical evidence abounds that the impact of trade openness is key in achieving growth. For instance, Khobai et al. (2018) investigate the relationship between trade openness and economic growth in Nigeria and Ghana from 1981 to 2016. The result reveals that trade openness exhibits positive and significant impact on the Ghanaian economy but causes harm to the economy of Nigeria. Duodu and Baidoo (2020) lent their support to the positive influence of trade openness on economic advancement. The study concludes that trade openness is a key determinant of the economy of Ghana. In a related development, Sakyi et al. (2015) investigate the relationship between trade openness and economic expansion in Ghana and found that the former is a key influencer of economic growth in Ghana. Mireku et al. (2017) examine the correlation between trade openness and economic expansion in Ghana. The study found a positive and significant influence of trade openness on the economy of Ghana in both short run and long run. Osabuohien (2007) look into the role of trade openness in achieving economic growth in Nigeria and Ghana. The finding proves that trade openness demonstrates positive impact on the economic growth of both countries. The study of Keho (2017) confirms the positive long run relationship between trade openness and economic expansion in Cote d'Ivoire. Ehigiamusoe and Lean (2018) examine the potency of trade openness in achieving economic growth in Ghana, Nigeria and South Africa. The result proves that trade openness is key in achieving desirable economic expansion in these economies.

2.1 *Theoretical review*

The model specification of this study is built on the general endogenous growth theory state that labour and capital are the traditional factors required to induce economic growth in any given economy. Specifically, the endogenous growth theory submits that physical capital, human capital and knowledge capital (technology) are the key determinants for economic growth. Technology or knowledge capital represents the intangible assets which includes ideas, methods, knowledge, and managerial skills. These assets are applied for the purpose of innovation or improvement of the production process. The relevance of this theory to the current study lies in the fact that FDI entry can also be classified as physical capital; thus, it represents a form of capital inflow.

The framework of this study is adopted from the work of Omoke and Opuala-Charles (2021). In line with the above-stated study, the Cobb-Douglas production function, developed by Charles Cobb and Paul Douglas (1927-1947), forms the basis upon which the current study stands to enable the estimation of the relationship between FDI inflows and economic development, as stated thus:

$$Y_t = A_t K_t^\alpha L_t^\beta, \ \left(0 < \alpha < 1, \ 0 < \beta < 1, \ \alpha + \beta = 0 \right). \tag{1}$$

Where: Y_t denotes the level of output (economic growth), At refers to technological advancements (it grows at an exogenous constant rate). K_t denotes physical capital and L_t denotes Labour. α are β the shares for capital and labour respectively which sum up to one.

The slow growth model posits that technology evolves as expressed: $A_t = A_0 e^{ht}$. Where A_0 is the initial stock of knowledge and 'ht' is the growth rate of knowledge at a time t.

The above Cobb-Douglas function is therefore extended by assuming that technological advancement is determined by the diffusion of technology through foreign direct investment, hence:

$$A_t = f(FDI_t) \qquad (2)$$

Where FDIt stands foreign direct investment at time t. Hence, equation (2) can be rewritten as:

$$A(t) = A_0 \times FDI_t^h \qquad (3)$$

Substituting equation (3) into equation (1) the production function becomes

$$Y = A_0 \times FDI_t^h K_t^\alpha L_t^\beta \qquad (4)$$

Note: Y indicates Gross Domestic Product per capital (GDPPC), FDI indicates foreign direct investment, K denotes Gross Capital formation, L is Labour Force and t indicates time dimension from 1980 to 2020. Therefore, the extended form (equation 1-4) indicates that foreign direct investment is also a determinant of economic growth.

3. Methodology and data sources

This section presents the data used, which were sourced from the World Bank data (WDI, 2020), for all the series under investigation. These series include economic growth proxied by GDPPC, gross capital formation (GCF), foreign direct investment (FDI), labor force (LF), and exchange rate (EXR). For the purpose of obtaining the growth effect, all the series were transformed into natural log values.

3.1 *Measurement of variables*

This section will describe the variables used and their measure. These include gross domestic product per capital, gross capital formation, foreign direct investment, labour force and exchange rate.

3.1.1 *Gross domestic product per capital*

GDP per capita is gross domestic product divided by midyear population. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant local currency.

3.1.2 *Foreign direct investment*

Foreign direct investment is the net inflow of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP.

3.1.3 *Gross capital formation*

Gross capital formation (formerly gross domestic investment) consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and "work in progress". According to the 2008 SNA, net acquisitions of valuables are also considered capital formation. Data are in constant 2015 prices, expressed in U.S. dollars.

3.1.4 *Labour force*

Labor force comprises people ages 15 and older who supply labor for the production of goods and services during a specified period. It includes people who are currently employed and people who are unemployed but seeking work as well as first-time job-seekers. Not everyone who works is included, however. Unpaid workers, family workers, and students are often omitted, and some countries do not count members of the armed forces.

3.1.5 *Exchange rate*

Real effective exchange rate is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs.

3.2 *Stationarity tests*

According to Gujarati (2009), most macroeconomic variables exhibit drift, suggesting that they are likely not to be stationary, especially at the level. Thus, a stationarity test is necessary to ascertain their level of stability, which is also expected to determine the method for model estimation to avoid spurious regression. In view of the above, this study relies on traditional methods (ADF and PP) to carry out the unit root tests.

The generalized equation is expressed as follows:

$$\Delta Y_t = \beta_1 + \beta_2 + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t.$$

Where, Gaussian white noise that is assumed to have a mean value of zero is represented byfalse, and possible autocorrelation represents series to be regressed on the time *t*.

3.3 *ARDL bounds testing to cointegration*

The Johansson method is the traditional way of achieving cointegration. However, the development of the ARDL approach by Pesaran et al. (2001) allows for both cointegration and a short run and long run estimation of a model. In essence, the ARDL method is suitable to be adopt for any order of integration-either I(1)/I(0) or I(1)/I(1) because of it flexibility. The method is in one part adopted to determine whether long-run co-movement exists between the series. The generalized equation is stated as follows:

$$\Delta Z = \varepsilon_0 + \varepsilon_1 t + \lambda_1 \delta_{t-1} + \sum_{i-1}^{k} \phi_1 \Delta Z_{t-j} + \sum_{i-1}^{k} \sum_{j-1}^{n} \omega_{ij} \Delta V_{it-j} + \Upsilon D_t + \mu_t.$$

$$H_0 : \varphi_1 = \varphi_2 = ... = \varphi_{n+2} = 0$$

$$H_1 : \varphi_1 \neq \varphi_2 \neq ... \neq \varphi_{n+2} \neq 0$$

where the rejection of H_0 indicates a proof that the series converged in the long run to correct any initial short run disturbance.

4. Result presentation and interpretation

This section presents the outcome of the estimation of the model of this study. This begins with the stationarity test using the ADF unit root method. The unit root test became necessary as it determines the method of adoption in other to avoid spurious regression. For this study, the result presented in Table 1 proves that only foreign direct investment (FDI here after) passed stationary test at level in the case of Nigeria. However, after taking the first difference, gross capital formation (GCF hereafter), gross domestic product per capita (GDPPC hereafter), labor force (LF hereafter), and

exchange rate (EXR hereafter) turned out to be stationary. Similarly, in the case of Ghana only FDI and GCF were found to be stationary at level. After taken the first difference, GDPPC, LF and EXR turn out to be stationary. In essence, the overall result confirms the case of a mixed order of integration which informs the decision for the adoption of ARDL approach as the most suitable procedure for the estimation of the models.

Table 1. Unit root test result

	ADF (Nigeria)		PP (Ghana)	
Variables	Level/1stdf.	O(I)	Level/1stdf.	O(I)
LnGDPPC	-2.5731** (0.0119)	I(1)	-3.6034 (0.0117)**	I(1)
LnFDI	-2.5408** (0.0129)	I(0)	-3.0145** (0.0445)	I(0)
LnLF	-2.9049* (0.056)	I(1)	0.2492** (0.0514)	I(1)
LnGCF	-3.5617*** (0.0009)	I(1)	-6.0854*** (0.0018)	I(0)
LnEXR	-5.3241*** (0.0000)	I(1)	-4.6611*** (0.0000)	I(1)

Source: Author's computation, O(I): Order of integration

Table 2 presents the short-run and long-run estimated results of the ARDL approach for both Nigeria and Ghana. In the case of Nigeria, the results prove that there is a significant relationship between FDI inflow and economic development, but only in the long term. Specifically, a 1% increase in FDI inflow leads to a marginal increase in GDPPC by 0.02 in the short run and a substantial improvement in GDPPC by 0.09% in the long run. This suggests that FDI inflow into the economy of Nigeria is significantly useful for achieving the desired goal of economic expansion, as supported by the endogenous growth theory. Empirically, Güngör and Ringim (2017) supported this assertion for the Nigerian economy, further corroborated by Joshua et al. (2023) for South Africa. Similarly, the labor force demonstrates a strong impact on the economic development of Nigeria, but only in the long term. A 1% increase in the labor force generates a 2.05% increase in GDPPC in the short run and a 0.58% increase in economic development in the long run. The implication is that the Nigerian economy is labor-driven, which aligns with the Solow growth model. According to the model, labor is a traditional factor required to induce growth in an economy. Gross capital formation demonstrates an insignificant positive impact on economic development in Nigeria, but only in the long run. Specifically, a 1% increase in gross capital formation will degenerate into 0.01% decrease in GDPPC in the immediate period. However, in the long run, a 1% increase in gross capital formation will cause a weak inducement in economic growth by 0.17% in future term. This mean that starving the economy in the short run to save may hurt the economy. But in the long run, the saving will be converted to investment to boost economic development. Further result shows an evidence that exchange rate demonstrate weak positive impact on economic development in Nigeria. A 1% increase in exchange rate will generates 0.0002% increase in GDPPC in the short run, and a 0.0006% increase in GDPPC in the long run. Generally, this implies that the economy of Nigeria is driven by labour rather than capital. Following economic intuition, the outcome seems to represent the true characteristics of the developing countries where labour factor is the key driver of economic activities. In essence, most of the developing economies for which Nigeria is one, suffers from inadequate capital needed to meet up with the investment demands. Thus, the pace of economic development slows down.

Secondly, in Ghana, the outcome indicates that the national economy is strongly supported by FDI inflow in both terms. In essence, a 1% increase in FDI inflow generates 0.04% increase in GDPPC in the short run and 0.07% improvement in GDPPC in the long run. This suggests that FDI inflow into Ghana is resourceful to the domestic economy as supported by the endogenous growth theory. In accordance with our appriori expectation as well as the assertion of growth theories such as the endogenous growth theory, labour force demonstrate a strong positive

relationship with GDPPC only in the long run. Findings show that a 1% increase in labour force will generate weak improvement in economic development by 1.7% in the immediate period. This turns out to be significantly favourable in the long run. In the future period, a 1% increase in labour force will enhance the Ghanaian economy by about 0.0005% aligns with the endogenous growth theory. This implies that human capital in Ghana possessed capacity to influence or generate meaning development within the national economy. Gross capital formation proves to exert favourable influence on economic development in Ghana only in the period under investigation. A 1% increase in capital formation will induce the national economy by 2.3% in the immediate period and 4.3% in the long run. Furthermore, this validates the theoretical assertion and our a priori expectation. In contrast, exchange rate poses strong danger to the national economy of Ghana in the long run. A 1% increase in exchange rate militates against the pace of economic development by 4.5% and 0.001% in both terms.

Table 2. ARDL result short run and long run form

	Nigeria					Ghana			
Variable	Coefficient	Std. Error	t-Statistic	Prob.	Variable	Coefficient	Std. Error	t-Statistic	Prob.
				Short Run					
LNLF	2.057055	2.168946	0.948413	0.3570	LNLF	1.785498	1.672652	1.067466	0.3026
LNGCF	-0.017548	0.041450	-0.423355	0.6777	LNGCF	-2.35E-13	1.58E-12	-0.148953	0.8836
LNFDI	0.016726	0.009476	1.765004	0.0966	LNFDI	0.042105	0.013213	3.186638	0.0061
LNEXR	0.000271	0.000146	1.858022	0.0817	LNEXR	-4.57E-06	0.000488	-0.009363	0.9927
ECT	-0.425883	0.061010	-6.980520	0.0000	ECT	-0.869741	0.139874	-6.218037	0.0000
				Long Run					
LNLF	0.581224	0.139671	4.161378	0.0007	LNLF	0.000502	0.000234	2.146510	0.0475
LNGCF	0.179057	0.429481	0.416914	0.7172	LNGCF	4.38E-07	6.05E-08	7.235792	0.0004
LNFDI	0.095620	0.025240	3.788414	0.0016	LNFDI	0.078134	0.023038	3.391499	0.0040
LNEXR	0.000636	0.000336	1.891815	0.0768	LNEXR	-0.001662	0.000642	-2.588079	0.0206

Source: Author's computation

The overall implication is that both economies of Ghana and Nigeria are investment-driven, but certainly only Ghana's is capital-enhanced. The economic intuition is that the complementary role of foreign resources in both economies is yielding positive results, which are educational. In conclusion, the cointegration test was carried out to ascertain if there exist a long run relationship between the series as presented in (see Table 3). The finding proves that the null hypothesis is rejected confirming the presence of long run relationship for the series for both models. Furthermore, the outcome of the ECT, as presented in Table 2, demonstrates that the economies of both countries will converge in the long run, with a speed of adjustment of 42% for the Nigerian economy and 86% for the Ghanaian economy.

To ensure that the models are reliable, accurate and fit for policy guide and direction, the models are subjected to diagnostic test which includes the normality test, heteroscedasticity test, serial correlation test and the Ramsey reset test as presented in Table 4. The result proves that the series are normally distributed, no cases of serial correlation, they are homoscedastic and that the models are well specified. Finally, the stability test as presented in Figure 1 and 2 shows that the models are stable and fit for policy implication as the blue line fall within the critical bond at 5 level of significance.

Table 3. ARDL bound test result

	Nigeria					Ghana			
Test statistic	Value	Signif.	I(0)	I(1)	Test statistic	Value	Signif.	I(0)	I(1)
F-statistic	7.796426	10%	2.696	3.898	F-statistic	4.832999	10%	3.035	3.997
K	4	5%	3.276	4.63	K	4	5%	3.578	4.668
-	-	1%	4.59	6.368	-	-	1%	5.147	6.617

Source: Author's computation

Table 4. Diagnostic tests

	Nigeria			Ghana	
Tests	F-statistic	P. Value	Tests	F-statistic	P. Value
$\chi 2$ NORMALITY	3.3733	0.1851	$\chi 2$ NORMALITY	1.4687	0.4798
$\chi 2$ SERIAL	1.9293	0.1767	$\chi 2$ SERIAL	9.0519	0.1038
$\chi 2$ WHITE	0.8919	0.5720	$\chi 2$ WHITE	2.0440	0.0931
$\chi 2$ RAMSEY	0.3176	0.7552	$\chi 2$ RAMSEY	0.9581	0.3543

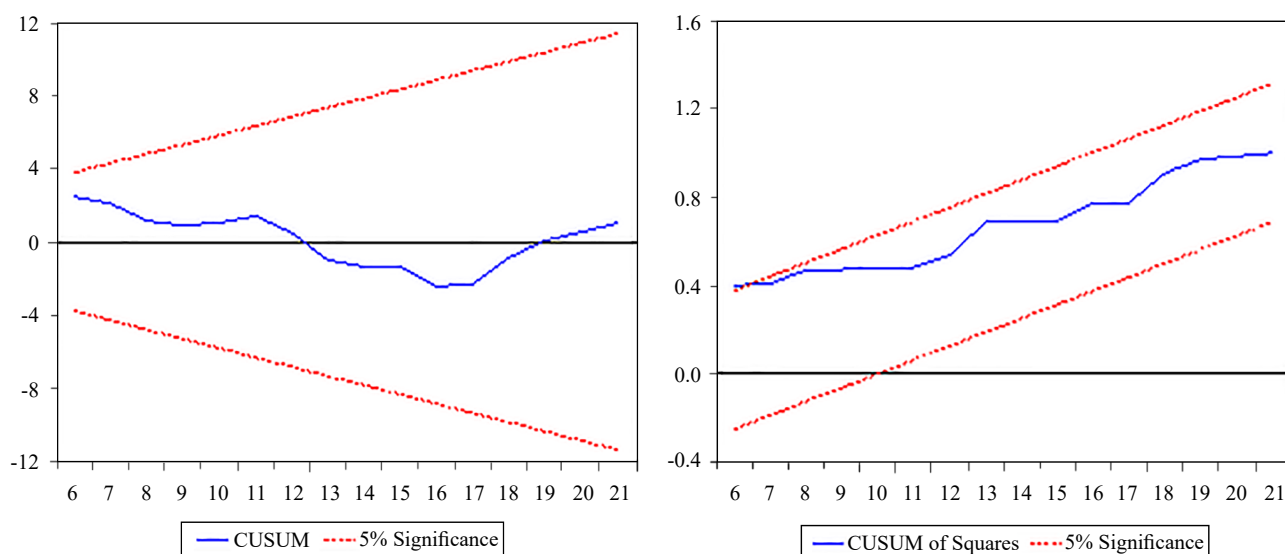Source: Author computation 2021

Figure 1. CUSUM and CUSUM Square tests (Nigeria)
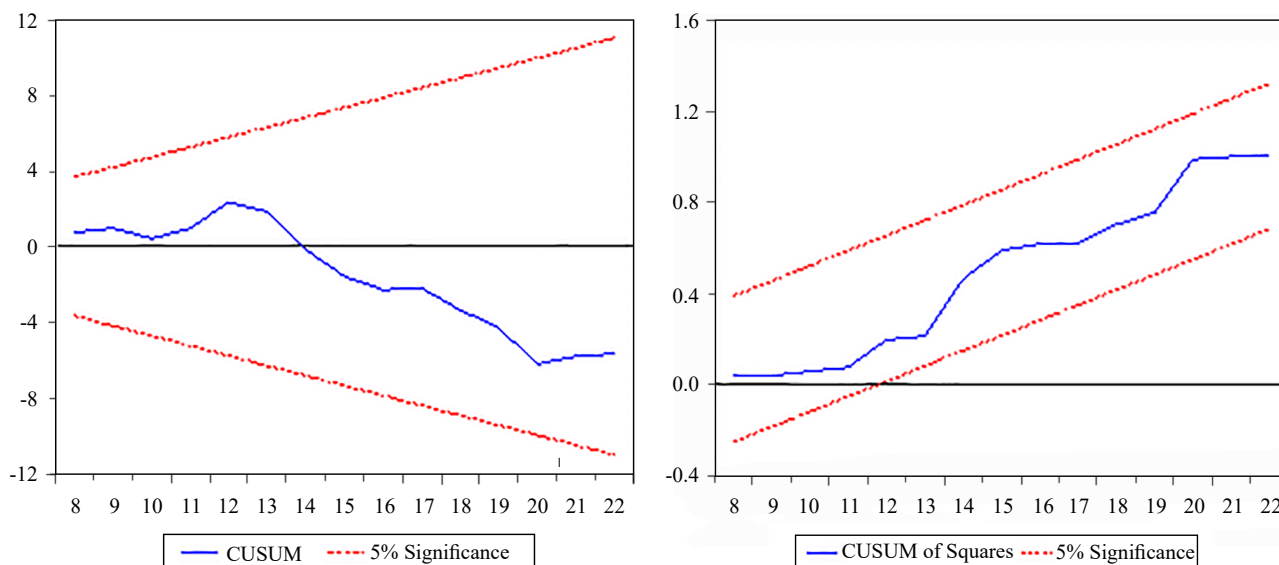
Figure 2. CUSUM and CUSUM Square tests (Ghana)

Table 5. Granger causality test

Null Hypothesis	Obs	F-statistic	Prob.
Model I for Nigeria.			
LNLF does not Granger Cause LNGDPPC	28	0.95277	0.4556
LNGDPPC does not Granger Cause LNLF	-	1.33308	0.2939
LNGCF does not Granger Cause LNGDPPC	27	1.05264	0.4081
LNGDPPC does not Granger Cause LNGCF	-	1.79591	0.1737
LNFDI does not Granger Cause LNGDPPC	27	4.24449	0.0136
LNGDPPC does not Granger Cause LNFDI	-	6.99093	0.0014
EXR does not Granger Cause LNGDPPC	28	4.12877	0.0142
LNGDPPC does not Granger Cause EXR	-	3.09739	0.0403
Model II for Ghana			
LNGCF does not Granger Cause LNGDPPC	16	1.22058	0.2893
LNGDPPC does not Granger Cause LNGCF	-	2.31874	0.1518
LNLF does not Granger Cause LNGDPPC	31	4.91933	0.0348
LNGDPPC does not Granger Cause LNLF	-	1.52677	0.2269
LNFDI does not Granger Cause LNGDPPC	31	2.95007	0.0969
LNGDPPC does not Granger Cause LNFDI	-	0.06260	0.8043
EXR does not Granger Cause LNGDPPC	31	0.98546	0.3294
LNGDPPC does not Granger Cause EXR	-	7.40784	0.0110

Source: Author computation

The granger causality test for both models are presented in Table 5 revealing the various causal relationship between the series. The outcome of the first model specifically shows a strong bi-directional causal link between FDI inflow and GDPPC in Nigeria. This implies that FDI entry is a key driver of economic development in Nigeria, and vice versa. Interestingly, exchange rate demonstrate a feedback relationship with GDPPC. This implies that the duo are influencers of each other. Finding shows that there is no evidence of causal relationship between GCF and GDPPC as well as between labour force and GDPPC. Thus, labour force and gross capital formation does not drive economic development. For the second model, there exist only one causal relationship running from labour force to GDPPC. Other variables does not exhibit strong relationship with economic development.

5. Conclusion, and policy implication

Recently, the economy of Ghana has gained massive FDI inflow, so much so that the nation has taken over from the economy of Nigeria, which has been leading in the West Africa sub-region for decades. This spurred this research work, in an attempt to re-examine the impact of FDI inflow on the economic development of the two giants' economies of the sub-region-Nigeria and Ghana. The drive is to ascertain which one of the two economies benefits more from FDI inflow in the period under investigation. The findings prove that FDI inflow demonstrates a strong positive impact on the economic development of both economies. In Nigeria particularly, findings show that FDI inflow strongly induces economic development, similar to the outcome of labor force. The implication is that during the period under review, the Nigerian economy is not only driven by investment but also relies heavily on labor. In view of the above, we recommend implementing more practical policy actions that will assist the national economy to achieve optimum FDI inflow in an effort to support the process of economic development. In essence, effort should be put in place to ensure investment-friendly environment in order to harness the full potential of the FDI inflow which will in turn promote economic development through the multiplier effect. These include provision of adequate infrastructure and a stable macroeconomic environment, including exchange rates. On the other hand, FDI inflow exhibits strong positive influence on economic development in Ghana similar to the result of GCF and labour force. However, result shows evidence of exchange rate hurting the pace of economic development. This implies that the Ghanaian economy is FDI-induced and also labour-enhanced. Thus, this study suggests that the Ghanaian authorities should continue to seek foreign resources to close the saving-investment gap and meet the required resources for domestic investment. This in turn will help generate the desired macroeconomic goal of rapid economic growth which is the stepping stone to achieving economic development. Additionally, the current state of human capital in Ghana is effective in generating the desired economic development. The authorities in Ghana should pay more attention to human capital development to enhance the national economy's ability to absorb and fully harness the potential of FDI inflows. The education system and other channel of developing human capital should be given significant attention. In summary, both economies should continue to focus on capacity building, which is essential for fully harnessing the potential of FDI inflows for development purposes.

Conflict of interest

The authors declare no competing financial interest.

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