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Foreign direct investment and economic growth nexus in ECOWAS: The leveraging effect of anti-corruption

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Article Info

Abstract

Purpose — This paper sought to investigate the interactive effect of corruption and FDI on economic growth in the Economic Community of West African States (ECOWAS) region empirically.

Methods — With panel data spanning 2000–2019 across 15 ECOWAS countries, this paper estimates its results by employing the system-GMM estimator, which combines a system of regressions in difference and in levels to resolve the problem of endogeneity.

Findings — Results reveal that while FDI independently spurs economic growth, control of corruption has no direct effect on growth in the region. The interactive effects reveal the complementarity between FDI and control of corruption in promoting economic growth in the ECOWAS region. The growth effect of FDI is larger and stronger given an improvement in the control of corruption across the 1st, 5th, 10th, and 25th percentiles.

Implication — To improve investor confidence, bolster FDI inflows and optimize its beneficial impacts on economic growth, this paper calls for measures to increase transparency and stronger political commitment to strictly investigate, prosecute and punish corruption in the ECOWAS region.

Originality/value — Although foreign direct investment (FDI) to host countries have been shown in the literature to be a crucial driver of economic growth, little is known about how anti-corruption measures affect the FDI-growth relationship. This paper contributes to policy by providing empirical evidence to bridge this gap.

Keywords — FDI, corruption, economic growth, GMM, ECOWAS

Introduction

Economic growth has been of great importance for many economies, and the issue persists in today's global economies. Trade and investments are increasingly expanding in this period of financial globalization (see Broner et al., 2016; Poelhekke, 2016). This has resulted in creating multinational ties between countries irrespective of the stage of growth or development. Foreign direct investment (FDI) is viewed as a strategic means of external financing (see UNCTAD, 2019), technology transfer (see Osano & Koine, 2015), deepening trade linkages (Freund & Pierola, 2012; Moran, 2014), raising employment capacities and wage levels (Javorcik, 2015; Peluffo, 2015) in developing countries. From a theoretical strand, the endogenous growth model, which puts forward a possibility of a spillover from FDI to residential industries and a positive impact on

productivity (Barro & Sala-i-Martin, 1997), have been used to provide support for policies in this direction. However, Kokko (1994) observed that the connection between FDI spillovers and domestic companies could differ across industries because foreign firms are likely to operate in environments that offer single opportunities for them to benefit. This observation implies that not every country benefits from the spillover effect of FDI inflows. Nevertheless, FDI supports economic growth in developing economies since they are unable to drive growth with domestic savings. Owing to low levels of domestic savings in developing economies, most economies are divided between creating enabling environments at no cost to attract FDI or raising funds from the financial markets (which ultimately increases public debt).

FDI was previously viewed as a medium for foreign dominance in the host country, unhelpful, and inciting inappropriate technologies into developing countries. Consequentially, the import substitution policy was initially adopted by most countries as a mechanism for economic growth. However, this view has changed over the past three decades, with countries putting in policies to attract FDI to achieve sustainable growth, accelerating modernization in industrialization and improving employment conditions and living standards. For instance, in Ghana, recent policies such as 'planting for food and jobs' and 'one-district one-factory' are fertile grounds for FDI inflows. Within the ECOWAS region, the *ECOWAS Investment Policy* and the *Regional Investment Climate Scorecard* seek to promote FDI.

Just as FDI remains an important determinant of economic growth for African economies (see Gui-Diby, 2014). Ajide and Raheem (2016) note that over the past decade, the institutional climate in the African region in general and the ECOWAS sub-region in particular has been plagued by corruption, political instability, and a host of investor-unfriendly characteristics. For instance, for the 2019 Transparency International's corruption index, Ghana, Benin, Cote D'Ivoire and Nigeria were ranked 80th, 80th, 106th and 146[th,] respectively. Economic theory suggests that high corruption levels degrade the perception of the host country's investment environment by reducing transparency, lowering investor confidence, wasting resources, and providing poor governance. Economically, corruption poses a threat due to the high costs of business operations to both the public and private enterprises in the long run. The pertinent question thus would be whether corruption play a role in FDI-Economic growth nexus.

There have been cogent theoretical foundations premising a strong association between FDI and economic growth, albeit with mixed empirical results. Extant studies have posited that the FDI-economic growth nexus is contingent on other indicators. For instance, De Mello (1999) showed that whether FDI drives the economic growth in a receiving country depends primarily on specific features such as the amount of skilled labour available. The significance of the level of human capital in the relationship between FDI and economic growth was also confirmed by Borensztein et al. (1998). Also, the development of financial systems was recognized as a prerequisite for the positive effect of FDI on growth (see Azman-Saini et al., 2010; Hermes & Lensink, 2003). Havranek and Irsova (2011) showed that the technology difference between the host and origination countries determines the impact of FDI on economic growth. On a sector-wise FDI inflow, Gönel and Aksoy (2016) concluded that the inflows of FDI to ICT and non-ICT sectors do not enhance economic growth. Bruno and Campos (2013) also showed in the metadata analysis of 1102 reports that about 44% of scientific articles found a significant and positive influence of FDI on economic growth, whilst twelve percent of the studies revealed a negative and significant impact of FDI on economic growth.

In all these, the interactions between corruption and the factors contributing to economic growth can be described as dynamic. Corruption impedes growth and deprecates economic development prospects (Farooq, Shahbaz, Arouri, & Teulon, 2013). On their part, Jalil et al. (2016) note that the role of corruption in determining FDI inflows is a long-debated issue, and there seems to be no consensus in the literature on the nature of this relationship. For instance, using an augmented gravity model, Belgibayeva and Plekhanov (2019) found evidence of greater investment inflows between countries with good control of corruption. Similarly, Habib and Zurawicki (2002) showed that corruption negatively impacts FDI and the greater the variation in the level of corruption between the donor and receiving country, the smaller the FDI inflow. On their part,

Voyer and Beamish (2004) showed that in countries, especially emerging economies, where there is no robust legal and regulatory mechanism to mitigate corruption and illegal activities efficiently, corruption reduces FDI.

On the other hand, Arif et al. (2020) showed that corruption positively and significantly impacts FDI among the BRICS countries. At the local level, Donaubauer et al. (2018) evidenced that foreign firms increase bribery among people living nearby through increased economic activity and norm transition. Also, Quazi et al. (2014) found that corruption facilities FDI in Africa. In a more recent study, Zander (2021) finds ambiguous results in that corruption is positively correlated with FDI inflows in the target country and negatively correlated with FDI inflows in the origin country. There are also studies such as Bayar and Alakbarov (2016); Bellos and Subasat (2012); Helmy (2013), who demonstrated that corruption has no significant impact on FDI. Thus, the establishment of the impact of corruption on FDI inflows becomes an empirical one.

Several studies have been untaken on FDI inflows in African economies (see Doku et al., 2017; Kamasa et al., 2020; Sakyi & Egyir, 2017; Yeboua, 2021; Zekarias et al., 2016). Despite these extant studies, not only is little attention placed on the mediation impact of corruption on the FDI-growth nexus, but ECOWAS as a region has also not been well studied in this regard. This paper thus contributes to literature and policy in two specific ways. First, it seeks to assess the impact of corruption and FDI on economic growth in the ECOWAS region. Second, it will investigate the interactive effect of corruption and FDI on economic growth in the ECOWAS region. It seeks to estimate the marginal effect of FDI on economic growth, given various thresholds of regional corruption reductions.

Methods

Data Type and Sources

The paper uses a panel data spanning 2000–2019 across 15 ECOWAS countries (Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Liberia, Ghana, Guinea, Guinea Bissau, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo). The choice of the study period was influenced by data availability on all variables. Data was sourced from the world development indicators, world governance indicators and author constructs.

Model Specification

Drawing on the empirical studies of d'Agostino et al., (2016), Pegkas (2015) and Sunde (2017), the paper specifies a linear dynamic panel model as shown in equation (1):

$$\Delta \ln y_{it} = \alpha + \delta \ln y_{it-1} + \beta_1 COR_{it} + \beta_2 FDI_{it} + \beta_3 (COR * FDI)_{it} + \gamma X_{it} + \varphi_i + \sigma_t + \varepsilon_{it} \quad (1)$$
for $i = 1, 2, 3, …, N$ and $t = 2, 3, …, T$

where $\Delta \ln y_{it}$ is the log difference of GDP per capita, measuring the economic growth for country i at time t. y_{it-1} is the lag of GDP per capita, capturing the initial level of development, with its coefficient δ approximating the speed of conditional convergence of income per capita to the long-run equilibrium. COR_{it} is an indicator for control of corruption, and is proxied by the index of control of corruption from the World Bank's world governance indicators. FDI_{it} is the net inflows of foreign direct investment while $(COR * FDI)_{it}$ is the interaction between control of corruption index and foreign direct investment. X_{it} is vector of other standard correlates of economic growth, including capital per worker, inflation, government expenditure as well as trade openness. $\varphi_i \ and \ \sigma_t$ are country-specific and time effects respectively. ε_{it} is the error term. Table A1 (see appendix) gives a detailed definition and sources of all variables used in this paper. Given that Equation (1) is a dynamic specification, β_i and γ are short-run parameters, and their respective long-run estimates are given as $\left(\hat{\beta}_i / (1 - \hat{\delta})\right)$ and as $\left(\hat{\gamma} / (1 - \hat{\delta})\right)$.

The main question this paper addresses is whether corruption (the control of corruption) limits (enhances) the impact of FDI on economic growth in the ECOWAS region. The answer to this policy-relevant research question lies in the parameters β_2 and β_3, which capture the stand-

alone impact of FDI and the joint/interaction impact of corruption control and FDI on economic growth, respectively. In particular, a positive and statistically significant estimate of β_3 suggests that improvements in keeping corruption at bay strongly complement FDI in bolstering economic growth in the ECOWAS region. From Equation (1), the conditional marginal impact of FDI on economic growth as the control of corruption can be obtained by the partial derivative:

$$\frac{\partial \Delta \ln y_{it}}{\partial \text{FDI}_{it}} = \beta_2 + \beta_3 * \text{COR}_{it} \tag{2}$$

Equation (2) is estimated and evaluated at the 1st to 99th percentile values of the control of corruption index.

Estimation Strategy

The simultaneous presence of y_{it-1} and φ_i in equation (1) signify potential endogeneity in the model since there is the correlation between the lag dependent variable and the residual. The instrumental variable (IV) regression and the GMM have conventionally been employed to deal with the endogeneity problem in models. The IV regression uses relevant exogenous variables to solve the endogeneity problems that may exist in a model. For instrument exogeneity to hold, the instrument and the error term should not be correlated, and on the other side, a strong correlation should exist between the instrument and the explanatory variable (Wooldridge, 2016). The challenge, however lies in finding exogenous instruments which completely satisfy these criteria, consequently leading to the selection of weak instruments which can produce highly biased results. Thus, in the absence of a valid instrument, this paper employs the system-GMM estimator, which combines a system of regressions in difference and in levels to resolve the problem of endogeneity in a model (Arellano & Bond, 1991; Arellano & Bover, 1995; Blundell & Bond, 1998). The system-GMM eliminates the challenge of selecting appropriate instruments

The GMM equation, as proposed by Arellano and Bond (1991), as well as Arellano and Bover (1995), is specified as

$$Y_{it} = \theta Y_{it-1} + \vartheta_0 X_{it} + \gamma_i + \alpha_{i,t} \tag{3}$$

where Y is the endogenous variable, X is a vector of exogenous variables, γ_i is unobserved country specific effect and $\alpha_{i,t}$ is the error term. The first difference is that equation (3) is taken to remove the country-specific effects. This yield

$$Y_{it} - Y_{it-1} = \theta(Y_{it-1} - Y_{it-2}) + \vartheta_0(X_{it} - X_{it-1}) + (\alpha_{it} - \alpha_{it-1}) \tag{4}$$

By formulation, the new error term $(\alpha_{it} - \alpha_{it-1})$ in equation (4) is correlated with the lagged dependent variable. Thus, the presumption that the residual is not serially correlated and the regressors are slightly exogenous is the moment condition under which the GMM panel estimator is used. This is expressed as

$$E[Y_{it} - v(\alpha_{it} - \alpha_{it-1})] = 0 \text{ for } v \geq 2; t = 3, \dots T \tag{5}$$
$$E[X_{it} - v(\alpha_{it} - \alpha_{it-1})] = 0 \text{ for } v \geq 2; t = 3, \dots T \tag{6}$$

According to Blundell and Bond (1998), this is the difference between GMM and the lagged levels of the regressors are weak instruments when the regressors are persistent over time. A two-step system-GMM estimator combines regression in differences with regression in levels to reduce the possible biases associated with the difference GMM estimator. The two-step system-GMM requires the introduction of a new moment condition as

$$E[(Y_{it-s} - Y_{it-s-1})(\gamma_i + \alpha_{i,t})] = 0 \text{ for } s = 1 \tag{7}$$
$$E[(X_{it-s} - X_{it-s-1})(\gamma_i + \alpha_{i,t})] = 0 \text{ for } s = 1 \tag{8}$$

Using these moment conditions is a GMM technique that produces accurate and efficient estimates of parameters. This estimator 's uniqueness relative to the difference GMM estimator is that it improves efficiency and avoids the weak instrument problem.

Results and Discussion

Descriptive Statistics and Correlation

As preliminary to the main results, the paper discusses the descriptive statistics and correlation for variables employed. Table 1 reports the descriptive statistics of variables in the paper. The mean income/GDP per capita was around US$1,045.7, suggesting that ECOWAS countries are, on average low-middle income countries. While the region's economies grew at an average of 4.5% per annum, income per capita grew at a much lower pace (1.7% per year), possibly due to the opposing effects of the rapidly increasing population across the region. Furthermore, net inflows of FDI to the region are generally low, accounting for less than 5% of GDP between 2000 and 2019. The relatively low average score on the control of corruption index (-0.6) – which by construction ranges from -2.5 (worst) to +2.5 (best) – reveals the endemic nature of corruption within the region.

Table 1. Descriptive statistics

| Variable	Obs., N	Mean	Std. Dev.	Min	Max
GDP per capita (constant US$)	300	1045.7	741.3	273.0	3907.6
GDP growth (%)	300	4.5	4.4	-30.1	26.4
GDP per capita growth (%)	300	1.7	4.2	-31.3	21.0
FDI net inflows (% of GDP)	300	4.8	10.5	-2.5	103.3
Control of corruption	300	-0.6	0.5	-1.6	1.0
Capital per worker (constant US$)	300	417.6	447.7	6.3	2784.5
Government expenditure (% of GDP)	300	14.4	5.2	0.5	30.8
Trade (% of GDP)	300	67.5	35.6	20.7	311.4
Inflation (%)	300	5.4	6.3	-3.5	34.7

There seems to be low capital per worker in the region, with an average of US$ 417.6 over the last two decades. Ranging between 0.5% and 30.8%, government expenditure as a share GDP averaged around 14.4% within the region. On average, merchandise trade accounted for more than two-thirds of GDP (67.5%) over the period, suggesting that ECOWAS countries are widely open to international trade and highly integrated into the world economy. Lastly, the inflation rate within the region ranged between -3.5% and 34.7%, and averaged around 5.4% during the study period.

The paper used correlation coefficients to assess the degree of association among the key variables in the study, as depicted in Table 2. While the correlation between GDP per capita and FDI is weak (-0.0519) and statistically insignificant, the results show a strong positive (0.59) and significant relationship between control of corruption and GDP per capita. This implies that countries with higher control of corruption are significantly associated with higher levels of income per capita, hence higher levels of growth and development, as depicted in Figure 1. The only explanatory variable that exhibits a strong positive (0.91) and significant association with GDP per capita is capital per worker, a fundamental driver of economic growth.

Table 2. Correlation matrix

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
[1] GDP per capita	1						
[2] FDI	-0.05	1					
[3] Control of corruption	0.59***	0.05	1				
[4] Capital per worker	0.91***	0.01	0.64***	1			
[5] Government expenditure	-0.05	0.19***	0.15**	0.01	1		
[6] Trade	0.09	0.31***	0.15***	0.12**	0.05	1	
[7] Inflation	-0.02	0.11*	-0.18***	-0.01	-0.26***	0.17***	1

Note: ***, **, and * denote statistical significance at 1%, 5% and 10% levels respectively
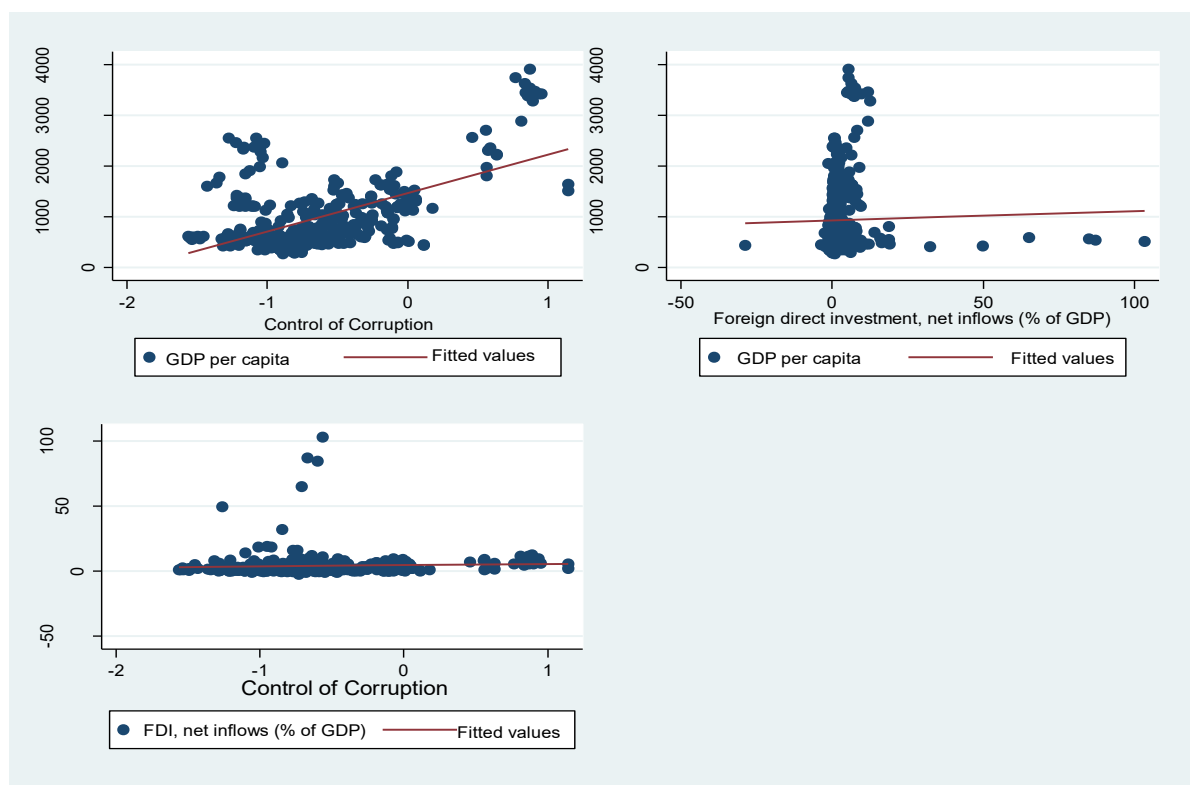
Source: Own construct based on WDI and WGI

Figure 1: Scatter Plots of GDP per capita, FDI inflows and control of corruption

Main Results

Table 3 reports the main empirical results based on the two-step system GMM estimation. The baseline results, which estimate the isolated effects of FDI and control of corruption on economic growth, are reported in Model 1. The preferred results are presented in Model 2, which accounts for the interaction effect of these two explanatory variables of interest. In all models, some important traditional correlates of economic growth were also controlled. The short-run results from the dynamic system-GMM estimations are reported in Panel A, while their corresponding long-run estimates (generated from linear combination) are presented in Panel B.

The diagnostic statistics reported in the lower panel of Table 3 show the absence of second-order autocorrelation in both models 1 and 2. This suggests that the internally generated GMM instruments are valid. The high *p*-values of the Hansen and Sargan tests for over-identification further corroborate the validity of these instruments. Overall, these diagnostic statistics confirm that estimates from the system-GMM approach are valid and can be relied upon for policy inference.

Effects of FDI and Corruption on Growth

From baseline model 1, FDI is estimated to exert a positive and significant effect on economic growth. The magnitude of FDI's coefficient suggests that all other things being equal, a 1% increase in FDI (as a share of GDP) induces about 10.5% (obtained as $[(e^{0.1} - 1) \times 100]$) growth in income per capita in the short run. The implied long-run effect of FDI is 9.5% (obtained as $[(e^{0.091} - 1) \times 100]$. Both coefficients are significant at 5% significance level. This shows that FDI is independently an important determining factor of economic growth within the ECOWAS region. Theoretically, this growth-enhancing effect of FDI may occur through the transfer of foreign capital to complement domestic capital and the transfer of productivity-enhancing inputs, managerial skills, and technologies.

Table 3. Estimated effects of FDI and corruption on economic growth in the ECOWAS

	(1)		(2)	
	Economic Growth		Economic Growth	
Panel A: *Short-run estimates*	Coeff.	Std. Err.	Coeff.	Std. Err.
Lag of GDP per capita	-0.101**	(0.042)	-0.122***	(0.017)
FDI	0.100**	(0.050)	0.476***	(0.103)
Control of Corruption	0.027	(0.022)	-0.004	(0.025)
FDI × Control of corruption			0.528***	(0.161)
Capital per worker	0.074***	(0.021)	0.081***	(0.011)
Government expenditure	0.014	(0.013)	0.021	(0.014)
Trade openness	-0.057***	(0.019)	-0.061***	(0.013)
Inflation	-0.00013	(0.001)	0.0004	(0.001)
Constant	0.288*	(0.164)	0.374***	(0.067)
Panel B: *Long-run estimates*				
FDI	0.091**	(0.045)	0.424***	0.089
Control of Corruption	0.025	(0.020)	-0.004	0.022
FDI × Control of corruption			0.470***	0.141
Capital per worker	0.067***	(0.017)	0.072***	0.008
Government expenditure	0.013	(0.012)	0.018	0.012
Trade openness	-0.052***	(0.017)	-0.054***	0.011
Inflation	-0.0001	(0.001)	0.00004	0.001
Constant	0.261*	(0.139)	0.334***	0.055
Observations	278		278	
No. of Instruments	15		15	
p-value of AR(1)	0.105		0.033	
p-value of AR(2)	0.326		0.401	
Hansen J	7.476		1.969	
Hansen *p-value*	0.381		0.982	
Sargan test	4.78		5.13	
Sargan *p-value*	0.687		0.744	

Notes: Dependent variable: $\Delta\log(GDPPC)$. With the exception of FDI, control of corruption, and inflation, all other explanatory variables are in the natural log form. Robust standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

While control of corruption is found to affect growth in income per capita positively, it is not statistically significant. A positive relationship implies that efforts to prevent public officials, elites, and private interest groups from exercising public power for private gains have the promise of spurring economic growth in the region. The positive relationship result is in line with previous studies including Cieślik and Goczek (2018) who also found that the lack of corruption has a positive and statistically significant effect on the growth rate of real per capita GDP. Other similar results include studies from Gründler and Potrafke (2019) and Ahmad et al., (2012). However, this paper's absence of statistical significance implies that such a beneficial effect may occur indirectly through other channels. Furthermore, to the extent that most countries in the region perform poorly on the control index of corruption, the lack of statistical significance may also be attributed to the low efficacy of anti-corruption and governance policies and measures.

Interaction Effect of FDI and Corruption on Economic Growth

The results in Model 2 of Table 3 explore whether anti-corruption measures enhance the growth effects of FDI within the ECOWAS region over the last two decades. This is captured by the coefficient of the interaction term (FDI × Control of corruption), which is positive and statistically significant at a 1% significant level. The results show that FDI does not only independently drive economic growth but also in conjunction with control of corruption. The estimated short-run (as well as the implied long-run) effect of FDI, which remains statistically, is 60.96%. The stand-alone (or direct) effect of the control of corruption index, albeit negative, remains statistically insignificant.

The coefficient of FDI (alone) is worth mentioning, which is larger in magnitude and statistically stronger relative to the baseline results after including the interaction term. This result intimates that control of corruption strongly enhances the impact of FDI on economic growth. This is specifically demonstrated by the estimated coefficient of the interaction term, which is larger in size than the sum of the isolated or individual coefficients of FDI and control of corruption. This outcome, which accords with our hypothesis, signifies the presence of synergy or complementarity between FDI and anti-corruption measures in propelling economic growth in the ECOWAS region. Other related studies support this finding. Malikane and Chitambara (2017) found evidence that less corruption and strong democratic institutions result in a positive impact of FDI on economic growth. Also, Hakimi and Hamdi (2017) found that corruption has a negative impact on economic growth through FDI. Finally, Yahyaoui (2021) revealed that corruption mitigates the impact of FDI on economic growth.

The marginal effect of FDI on economic growth as the control of corruption improves is presented in Table 4 and Figure 2. They are obtained by substituting the parameters of equation (2) with the corresponding estimated coefficients in Model 2 (Table 3) and evaluating the resultant expression at the 1st to 99th percentile values of control of corruption.

Table 4. The marginal effect of FDI on economic growth as the control of corruption improves

Percentile/Mean	Control of corruption	Marginal effect	Std. Err.
1%	-1.54	-0.335**	0.153
5%	-1.28	-0.199*	0.112
10%	-1.19	-0.150	0.098
25%	-0.98	-0.044	0.068
50%	-0.69	0.114***	0.034
Mean	-0.61	0.15***	0.031
75%	-0.38	0.276***	0.048
90%	-0.02	0.467***	0.100
95%	0.63	0.809***	0.202
99%	0.90	0.949***	0.244

Note: The marginal effects are calculated as $(\partial \Delta lnGDPPC/\partial FDI = 0.476 + 0.528 \times COR)$ from Equation (2) using the '*nlcom*' Stata command. $^{*} p < 0.10$, $^{**} p < 0.05$, $^{***} p < 0.01$
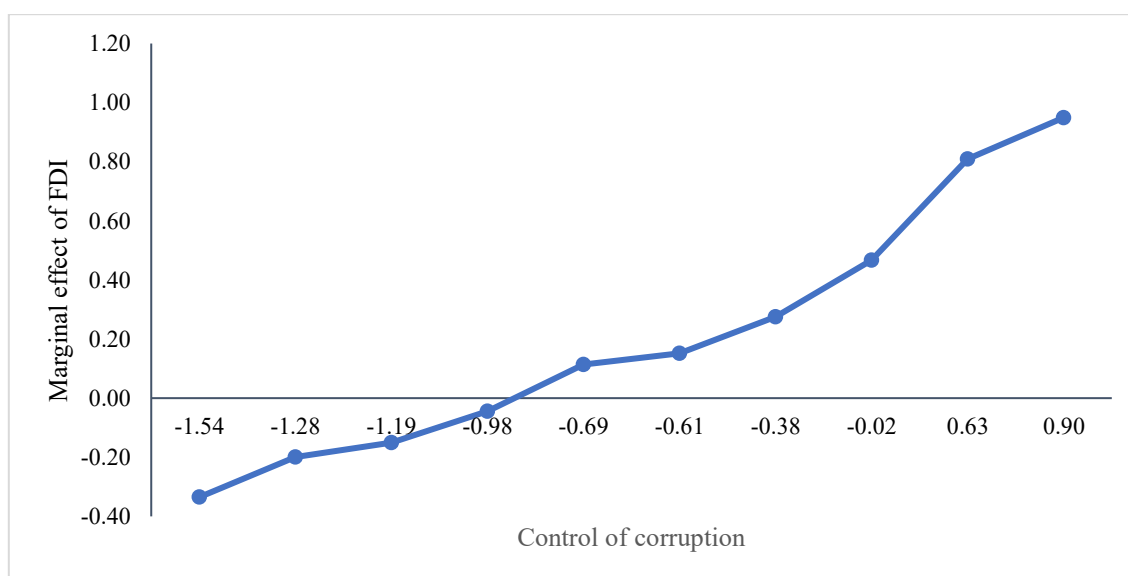
Source: Authors construct based on Table 3.

Figure 2: Marginal effect of FDI on economic growth as control of corruption improves

The growth-enabling effect of FDI turns positive, larger and strongly significant as the control of corruption improves to the 50th percentile and beyond. While the marginal effects are negative at the 1st, 5th, 10th, and 25th percentiles of control of corruption (mainly because of how

the index is measured), it is observed that the effect of FDI on economic growth increases as the anti-corruption index improves. An important policy implication of the positive trend in the marginal effect, as depicted in Figure 2, is that continual improvement in the efficacy of anti-corruption measures (hence, better control of the corruption index) can be instrumental in exploiting the beneficial effects of FDI on the economic growth of ECOWAS countries.

Intuitively, this result can be attributed to the fact that effective control of corruption strongly boosts investor confidence, lowers transaction costs, and raise economic incentives to local and foreign investors to undertake optimal investment decisions, including channelling their capital to productive sectors, and long-term, growth-enhancing projects. This result is consistent with several studies documenting the primacy of tackling corruption (and improving other aspects of institutions and governance) in fostering economic growth in Africa and other developing regions (see Bonuedi et al., 2019; Hakimi & Hamdi, 2017). For instance, Hakimi and Hamdi (2017) reported that corruption is significantly deleterious to economic growth in the Middle East and North Africa (MENA) region because it limits the effect of investment activities and foreign direct investment inflows.

Table 3 also reveals that some of the controlled variables are important determinants of economic growth within the region. In both models, the effect of the initial real GDP per capita lag is negative and statistically significant. The results in model 2 show that a 1% increase in capital per worker results in a 0.08% increase in economic growth in the short run and 0.07% implied growth in the long run. Contrary to theoretical predictions, results from the paper show that higher openness to trade acts as a drag on economic growth within the ECOWAS region. Also, while government expenditure is estimated to affect growth positively, the results show that it is not statistically significant. Lastly, the effect of inflation is negative and positive for models 1 and 2, respectively, albeit insignificant in both models.

Conclusion

FDI is considered a major contributor to economic growth in developing countries. High levels of corruption in developing countries may deter investors from committing capital to new overseas productive assets, thereby limiting the impact of FDI on economic growth. This paper aims to unearth the effect by investigating how corruption (and its control) influences the impact of FDI on economic growth. To this end, the paper employed the system GMM estimator on panel data covering 15 ECOWAS countries from 2000 – 2019. The findings show that while FDI independently exerts a significant effect on economic growth within the ECOWAS region, the control of corruption, on its own, has no direct effect on growth in the region. However, results from analyzing their interaction provide evidence that control of corruption significantly enhances the beneficial effect of FDI on the growth of economies, which depicts the presence of synergy (or complementarity) between FDI and anti-corruption measures in growth in the region. With respect to other correlates of growth, it is found that while domestic capital (per worker) spurs economic growth, trade openness drags the growth process of ECOWAS countries. Government expenditure and inflation were not found to be statistically significant in determining growth in the region.

Overall, the results show that improving the efficacy of anti-corruption measures by improving investor confidence, cutting transaction costs, and boosting economic incentives can be instrumental in attracting FDI and its beneficial effects on economic growth in the region. Thus, this paper recommends implementing policies to increase transparency in domestic and international transactions, identify potential corruption risks, and, more importantly, for strong political commitment to investigate, prosecute and punish corruption in the region. Moreover, policies must be implemented to enhance the business and investment environment, especially in regulatory frameworks, legal systems, tax systems and the financial sector, among others, to attract FDI. Lastly, complementary policies to promote domestic capital formation and diversify into value-added exports (whilst limiting import dependency) also have the potential to stimulate growth in the region further.

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Appendix

Table A1. Definition of variables and data sources

Variable	Description	Source
GDP per capita	It is gross domestic product divided by midyear population	World Development Indicators (WDI)
GDP growth	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2010 U.S. dollars	WDI
GDP per capita growth	Annual percentage growth rate of GDP per capita based on constant local currency. Aggregates are based on constant 2010 U.S. dollars.	WDI
FDI net inflows	It refers to direct investment equity flows in the reporting economy. It is measured as the net FDI inflow as a percentage of GDP	WDI
Control of corruption	It is proxied by the index of control of corruption from the World Bank's world governance indicators. As described in Kaufmann et al. (2010) control of corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests	World Governance Indicators
Capital per worker	It is the gross fixed capital formation divided by population	Author construct from WDI
Government expenditure	It reflects the extent of government participation in the economy. It is measured as all current expenditures by government for the acquisition of goods and services including payments to workers expressed in terms of GDP percent	WDI
Trade	It is the sum of exports and imports of goods and services measured as a proportion of GDP	WDI
Inflation	Inflation as determined by the consumer price index reflects the yearly percentage adjustment in the general price level of goods and services in an economy over a period of time.	WDI