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Impact of corruption on Foreign Direct Investment in a sample of developing countries during the period (2005 - 2020): A standard study utilizing panel data

Amine Tammar
Ph.D. in economics, University of Ali Lounici Blida2 , Department of economics, Algeria
ORCID ID: 0009-0009-6764-2319
Email: a.tammar@univ-blida2.dz

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Abstract

The research aims to study the impact of corruption on foreign direct investment for the period (2005-2020), using a dynamic panel for a sample that included (12) developing countries, where the method of estimating (PMG) was used to estimate the study model, which showed that the Corruption Perceptions Index significant and inverse relationship with foreign investment in the long term for the countries under study, which is consistent with most of the previous studies, where corruption is considered a tax of an impeding nature to investment and reduces the incentive to invest because investors in the corrupt environment have additional burdens when they carry out their investment activities, either in the long run In accordance with the error correction model, we noticed positive significant effect of the corruption variable on foreign direct investment, due to the delayed response of the foreign investor to the spread of corruption in the host country .

1. Introduction

The relationship between corruption and foreign direct investment (FDI) reveals a multifaceted and complex domain, due to the multitude of determinants that influence FDI across diverse economic landscapes. FDI, undoubtedly, has a pivotal role in facilitating capital flows and driving economic growth in host countries. However, the flow of FDI isn't solely dependent on favorable market conditions and attractive investment opportunities. The prevalence of corruption and the level of transparency within a host country significantly influence the decisions of international managers contemplating investments (Zhao, Kim, & Du, 2003). Contrary to the singular attraction of untapped markets and investment prospects, the relationship between corruption, transparency, and FDI has been a subject of great interest among both academia and decision-makers (Baliamoune-Lutz & Ndikumana, 2008) .The burgeoning incidence of corruption in developing economies — attributable to the prevailing environment that fosters its growth— manifests with varying degrees and impacts depending on the unique political, economic, and social structures of each nation. Corruption is by no means a new issue; however, its escalation, expansion, and intricate web of mechanisms have reached unprecedented levels. Thus, presenting a daunting impediment to foreign investments in these countries, which are influenced by various economic, social, political, and administrative factors. As a response, these countries have conscientiously strived to attract foreign investments by offering a variety of incentives and facilitations, revising laws and regulations, and examining the spectrum of influential factors to identify those that have positive or negative effects (Primorac & Smoljić, 2011).

The study aims to highlight the impact of corruption on foreign direct investment (FDI) for a sample of developing countries, drawing from annual datasets spanning the period from 2005 to 2020. The decision to conclude the study period in 2020 was driven by scientific considerations, aiming to avoid misrepresentation in examining the correlation between corruption and FDI, potentially influenced by the global disruptions of the COVID-19 pandemic in 2022. Within this study, we employed the Pooled Mean Group (PMG) estimator, a dynamic panel model, to analyze both the short-term and long-term implications of corruption on FDI. This approach aligns with modern trends in econometric methods. To achieve the research objectives and comprehensively address various aspects, we adopted a descriptive methodology by drawing from previous studies. Additionally, we employed standard econometric methods and modern statistical techniques for dynamic panel data to emphasize the impact of corruption on FDI for the sample of developing countries. The analysis was conducted using two statistical software programs, Eviews12 and Stata15.

2. Literature Review

Through the review of several previous studies that have addressed the phenomenon of corruption and its relationship with foreign direct investment (FDI), we have observed a disparity in defining the nature of this relationship. This divergence can be attributed to the complexity and equivocal nature of the phenomenon itself, as well as its connection to various economic phenomena. Consequently, academic research has yielded diverse outcomes concerning both the statistical and economic significance of this relationship, depending on the particular regions under study, the selected countries, and the methodologies employed. The following studies serve as an illustrative demonstration of this divergence:

The study conducted by (Mohsin, 2002), titled "Corruption and Foreign Direct Investment," aimed to investigate the impact of corruption on foreign direct investment using a multiple linear regression model estimated through the method of least squares. The study encompassed a sample of 89 countries from 1996 to 1998. The findings revealed a positive and statistically significant impact of political stability and transparency on foreign direct investment. However, a negative and statistically significant impact of corruption on foreign direct investment was also observed.

Another relevant study (Nedra & Younes, 2014) titled "Impact of Institutional Quality on the Attractiveness of Foreign Direct Investment" was conducted by Baklouti Nedra and Boujelbene Younes in 2014. This study aimed to examine the factors affecting the inflow of foreign direct investment (FDI) in the Middle East and North Africa (MENA) region. Utilizing panel data estimation techniques and the fixed-effects model to analyze data from 8 countries over the period from 1996 to 2008, the study discovered a positive influence of institutional quality on attracting foreign direct investment, while corruption and regulatory quality were found to have adverse effects. Additionally, the efficiency of public administration exhibited a positive impact on foreign direct investment.

Moreover, (Aloui, 2019) conducted a study titled "The Role of Political Instability and Corruption on Foreign Direct Investment in the MENA Region," aiming to demonstrate the diverse effects of political instability and corruption on foreign direct investment in the Middle East and North Africa region. The study incorporated data from eight countries, analyzing the period from 1996 to 2016 using panel data estimation techniques. The study focused on highlighting how political instability and corruption can negatively affect foreign direct investment and generate several costs for the economic activities of foreign investors in the host country. The researcher considered corruption as a major determinant of foreign direct investment, emphasizing its potential risks for foreign investors. The theoretical findings were confirmed through the estimation of a standard model, which revealed a negative relationship between political instability and foreign direct investment, as well as between corruption and foreign direct investment.

In a separate study conducted by (Donaubauer & Steglich, 2019) titled 'Foreign Direct Investment & Petty Corruption in Sub-Saharan Africa: An Empirical Analysis at the Local Level,' the researchers introduced a different perspective in contrast to the three preceding studies we previously examined. This study delved into the inquiry of whether foreign direct investment serves as an inducement or impediment to the economic, social, and political advancement within the host country, as well as its potential influence on corruption levels. The study addressed two primary inquiries: First, does the presence of foreign investors exert an influence on the prevalence of corruption? Second, what underlying mechanisms contribute to this relationship? To assess whether the presence of foreign investors correlated with localized shifts in corruption, the researchers scrutinized foreign-owned production firms operating in 19 Sub-Saharan African countries. The results revealed that the presence of foreign companies increased the incidence of bribery among individuals engaged in economic transactions with these companies. Ultimately, the researchers advocated the necessity of combating corruption by strengthening local legislation and institutions dedicated to anti-corruption efforts, thereby fostering their greater integration into the global economy.

Furthermore, the study conducted by Blundell-Wignall and Roulet (2017), titled 'Foreign Direct Investment, Corruption, and the OECD Anti-Bribery Convention,' Furthermore, the study conducted by (Blundell-Wignall & Roulet, 2017), titled 'Foreign Direct Investment, Corruption, and the OECD Anti-Bribery Convention', presents a dynamic gravity model of foreign direct investment (FDI) to explore the general impact of corruption and the OECD Anti-Bribery Convention in particular countries. The researchers underscored the variance in prior economic perspectives concerning the influence of corruption on investment and attributed this inconsistency to the use of diverse economic models and potential data misinterpretations.

3.Methodology

3.1 Data and Research Variables :

In order to construct the standard model and address the research problem, this study employed methods for analyzing cross-sectional time series data (panel data). Our analysis has anchored on a selected sample encompassing 12 emerging economies, which is: Senegal, Uganda, Pakistan, the Republic of Congo, Mali, Morocco, Cameroon, Algeria, Jordan, Nigeria, Malaysia, and India, resulting in a total sample size (N) of 12. The chronological scope of this study extended from the year 2005 to 2020, thereby encompassing a total of T=16 time periods, the sample size has been estimated at (NT=12*16=192). The only criterion for selecting this temporal expanse is the availability and accessibility of pertinent data. The data pertaining to foreign direct investment was obtained from the World Bank’s database (WDI), while the corruption perceptions index was acquired from Transparency International. In a bid to render the variables more amenable for analysis and interpretation, we have applied the natural logarithm transformation to the research variables, thereby shaping the research model as follows:

$$\ln inv_t = \beta_0 a_t + \beta_1 \ln cpi_t + \varepsilon_t$$

Herein, ln(inv): denotes the natural logarithm of the foreign direct investment (FDI) which is the net inflows (Balance of Payments, quantified in the current U.S. million dollars), ln(cpi): symbolizes the Perceived Corruption Index; εt: represents the random error term; (β0, β1, β2): are the model parameters.

3.2 Unit Root test panel data:

The application of panel-based unit root tests enables the incorporation of individual-specific intercepts and temporal trends, as well as accommodating variations in error variance and higher-order serial correlation across individuals (Levina, Linb, & Chu, 2002). Numerous approaches have been formulated for conducting unit root tests within panel data, notable examples being the approaches of Quah (1994), Levin and Lin (1992), Im, Pesaran, and Shin (1995), and Choi (2001). All of these tests assume cross-sectional independence, though Im, Pesaran, and Shin considered as a simple form of cross-sectional correlation using time-specific effects. Nonetheless, for certain cross-country datasets, it may be more appropriate to assume cross-sectional correlation, given movements of economies are often observed. Furthermore, the cross-sectional correlation has potential implications on the finite sample characteristics of panel unit root tests, a phenomenon examined by O'Connell (1998).

In recognition of the imperative for panel unit root tests that allow cross-sectional correlation, researchers have innovated various methods. Notably, Maddala and Wu (1999) employ a bootstrap technique to recalibrate the critical values associated with the tests of Levin and Lin (1992), Im, Pesaran, and Shin (1995), and Fisher

(1932). Concurrently, Taylor and Sarno (1998) delve into the multivariate augmented Dickey-Fuller test (Choi, 2006). These methodologies stand out as pioneers in proposing the unit root test using panel data to overcome the limitations of the Levin, Lin, and Chu test (2002). The latter is predicated on two foundational assumptions: the homogeneity of the autoregressive root with independence across individuals (K.SIm, Pesaran, & Y.Shin, 2003). Moreover, the Hadri test (2002) emerges as a distinct methodology, differentiating itself through its unique null hypothesis, which stands in contrast to the alternative hypothesis unlike the rest of the earlier tests. Additionally, it takes into consideration the heterogeneity nature of the autoregressive root (Hadri.k, 2005, pp. 148-161).

3.3 Pedroni Cointegration Test

The Pedroni Cointegration Test, proposed by Pedroni (2004), offers a methodology that assumes heterogeneity. This test shares similarities with the approaches presented by McCoskey and Kao (1998) and Kao (1999) (Blatagi & Badi, 2005, p. 254). It relies on two sets of statistics, four of which pertain to the test of the within-dimension, referred to as "Panel Statistics", while the remaining three are related to the test of the between-dimension, referred to as "Group Statistics." Both tests are based on the fundamental assumption of testing the hypothesis of the absence of common integration relationships. Time dummy variables can be incorporated into the test to address simple cross-sectional correlation, which is mathematically represented as follows (Neal, 2014, p. 685) ;

$$\overleftarrow{y_t} = \frac{1}{N}\sum_{i=1}^{N} y_{i,t}$$

Regarding the mathematical formulation of the model, it relies on the estimation of the model's long-range residual, which can be expressed as follows:

$$y_{i,t} = \alpha_i + \beta_{1i}\, x_{1i,t} + \beta_{2i}\, x_{2i,t} + \dots\dots\dots\dots + \beta_{Mi}\, x_{Mi,t} + e_{i,t}$$

$$\Delta y_{i,t} = \sum_{m=1}^{M} \beta_{mi}\Delta x_{mi,t} + \eta_{i,t}$$

$$\hat{e}_{i,t} = \widehat{y_i}\hat{e}_{i,t-1} + \hat{\mu}_{i,t}$$

$$\hat{e}_{i,t} = \widehat{y_i}\hat{e}_{i,t-1} + \sum_{k=1}^{k} \widehat{y_i}\Delta\hat{e}_{i,t-k} + \hat{\mu}^{*}_{i,t}$$

Where :

i = 1, 2, 3, ..., N: Number of individuals in panel data .

t = 1, 2, 3, ..., T: Number of time periods.

k = 1, 2, 3, ..., K: Number of lags for the augmented Dickey-Fuller (ADF) test .

M: Number of regressions.

Afterward, several series and coefficients are computed from the above regressions. Then, the seven statistics for the Pedroni test can be constructed.

3.4 Presentation of variables according to the estimation methods (PMG) and (MG):

The Mean Group estimator (MG) is employed to estimate the parameters of a dynamic panel data model, in cases where there is heterogeneity across individuals (cross-sectional units) but homogeneity over time. In contrast, the Pooled Mean Group (PMG) estimator serves as an extension of the Mean Group estimator, enabling the handling of both heterogeneity across individuals and temporal heterogeneity in the dynamic panel data model (Pesaran, Shinand, & Smith, 2004, p. 6). To estimate the model of the study, which involves dynamic panel data analysis of the impact of corruption on foreign direct investment (FDI) in the countries under investigation, we initially formulate the model within the framework of the Autoregressive Distributed Lag (ARDL) model with (p, m, ... mk) ARDL. Here, 'p' represents the number of lags of the dependent variable, and 'm' denotes the number of lags of the explanatory variables. The model takes the following form:

$$lninv_{ti} = a_{0Y} + \sum_{j=1}^{p} \lambda_{ij}.\ lninv_{i,t-j} + \sum_{i=0}^{m} \delta_{ij} X_{i,t-j} + Y_t + \varepsilon_{it} \dots\dots\dots (1)$$

$lncpi_{ti}$: represents the foreign direct investment (FDI) for the country (i) during the time period (t).

$lncpi_{i,t-j}$: Matrix of independent variable represented as (lncpi).

λ_{ij}: Parameters of the time-delayed dependent variable.

δ_{ij}: Parameters of the explanatory variable.

ε_{it}: The limit of the random error, assumed to be symmetrically and naturally distributed across countries and time periods, that is:

$\varepsilon_{it} \quad N(0, \sigma_\varepsilon^2)$ ⟶

(m, p) — Represent distributed lag periods that differ from one country to another.

The fixed effects contain the differences between thecan be taken into account to μ_i countries under examination, and the time effects Y_t can also be considered (Shaaril, Abidin, & Karim, 2020, p. 620).Model (1) can be reformulated in the context of error correction as follows:

$$\Delta lninv_{ti} = \Theta_i(ln\,inv_{i,t-j} - \beta_i' X_{i,t-j}) + \sum_{j=1}^{p-1} \lambda_{ij}^* \Delta ln\,inv_{i,t-j} + \sum_{i=1}^{m-1} \delta_{ij}^* \Delta X_{i,t-j} + Y_t + \mu_i + \varepsilon_{it} \dots\dots\dots (2)$$

In order to acquire MG estimates, a model is individually estimated for each country with an imbalance correction parameter, or the speed of variable adjustment $lninv_{ti}$ to the parameters. The average of the estimated parameters, including the long and short-run parameters and the lower-bound error correction parameter, is then computed as follows:

$$\hat{\Theta}_{MG} = \frac{\sum_{j=i}^{N} \hat{\Theta}_i}{N} \qquad , \hat{\beta}_{MG} = \frac{\sum_{j=i}^{N} \hat{\beta}_i}{N},$$

$$\hat{\lambda}_{MG} = \frac{\sum_{j=i}^{N} \lambda_{ij}}{N} \qquad , \hat{\delta}_{MG} = \frac{\sum_{j=i}^{N} \delta_{ij}}{N}$$

where: N is the number of countries under study, and j =1,…………,q-1

It is an estimation method (MG) that does not consider the possibility of some model parameters being equal (homogeneous) across countries, Therefore, our study also relied on panel data for estimating the PMG. This approach allows for the inclusion of the average within the group and computing the averages of estimating the error correction, accommodating constraints in the model considered (Tammar, 2021, p. 174) . As a result, the derived model is as follows:

$$\Delta lninv_{ti} = \Theta_i(ln\,inv_{i,t-j} - \beta_i' X_{i,t-j}) + \sum_{j=1}^{p-1} \lambda_{ij}^* \Delta ln\,inv_{i,t-j} + \sum_{i=1}^{m-1} \delta_{ij}^* \Delta X_{i,t-j} + Y_t + \mu_i + \varepsilon_{it} \dots\dots\dots\dots\dots (3)$$

The long-run parameters Fi become equal across the group of states. To obtain the estimators of the combined group mean (PMG), the model (3) is estimated, getting:

$$\hat{\Theta}_{PMG} = \frac{\sum_{j=i}^{N} \hat{\Theta}_i}{N} \qquad , \hat{\beta}_{PMG} = \frac{\sum_{j=i}^{N} \hat{\beta}_i}{N}$$

$$\hat{\lambda}_{PMG} = \frac{\sum_{j=i}^{N} \hat{\lambda}_{ij}}{N} \qquad , \hat{\delta}_{PMG} = \frac{\sum_{j=i}^{N} \hat{\delta}_{ij}}{N},$$

j=1,………..,q-1

Unit root results3.5

To assess the stability of the study variables, we conducted several tests, including the Levin, Lin, and Chu (2002) test, the lm Pesaran and Shin IPS test (2003), and the ADF-Fisher Chi (1981) test. The results of these tests are displayed in Table 1.

Table 1: Unit Root Test Results for Study Variables

At the level						
Test	**LLC test**		**LPS test**		**ADF test**	
Variable	Test value	P-value	Test value	P-value	Test value	**P-value**
lninv	-0.15851	0.437	-0.8975	0.1848	33.571	**0.0926**
lncpi	3.0822	0.999	2.00411	0.9775	13.546	**0.9562**
In the first difference						
Test	**LLC test**		**LPS test**		**ADF test**	
Variable	Test value	P-value	Test value	P-value	Test value	**P-value**
lninv	-4.5342	0.00*	-5.11602	0.000*	70.132	**0.000***
lncpi	-3.3452	0.0004*	-4.277	0.000*	61.138	**0.000***

The probabilities are significant at 5%*

Source: Prepared by the researcher based on Eviwes12

The stationarity tests IPS (Augmented Dickey-Fuller test) and LLC (Phillips-Perron test) suggest that both Foreign Direct Investment (lninv) and Corruption (Lncpi) variables are not stationary at the level, as their corresponding p-values exceed the 5% significance level. However, after applying the first difference, the variables exhibited stationarity, leading to the rejection of the null hypothesis of unit roots and acceptance of the alternative hypothesis.

3.6 Cointegration Analysis between Study Variables :

The results of the stationarity tests indicated that both study variables are stationary at the first difference. to verify the presence of a long-term relationship between these variables, an examination of a cointegrating relationship was performed using the Pedroni test (2004), and the results are presented in Table 2.

Table 2. The results of the Pedroni co-integration test

(within-dimension)		
Test	Statistical Value	**P-value**
Panel v-Statistic	-1.301273	**0.9034**
Panel rho-Statistic	-6.749186	**0.0000***
Panel PP-Statistic	-8.483750	**0.0000***
Panel ADF-Statistic	-3.961486	**0.0000***
(between-dimension)		
Test	Statistical Value	**P-value**
Group rho-Statistic	-0.789649	**0.2149**
Group PP-Statistic	-5.444660	**0.0000***
Group ADF-Statistic	-2.639431	**0.0042***

*The probabilities are significant at 5%.

Source: Prepared by the researcher based on Eviwes12.

From the table above, we observe the existence of a long-term cointegration relationship according to the majority of test statistics, which are represented by the tests of within-dimension error correction models, except for the Panel v-Statistic test. Regarding the tests for between-dimension error correction models, significance was observed, except for the Group rho-statistic test. Thus, we reject the null hypothesis proposing no cointegration and accept the alternative hypothesis of the existence of cointegration for all countries, as well as the existence of particular country-specific cointegration, at a 5% significance level.

4 .Estimation of Error Correction Model using the (PMG) and (MG) Methods:

Following the confirmation of cointegration, we proceeded to estimate the study model using both the Panel Mean Group (PMG) and the Mean Group (MG) approaches, as illustrated in Table 3. To compare the outcomes between the pooled within-group estimators (PMG) and the between-group estimators (MG), we employed the Hausman Test.

Table 3. Results of Study Model Estimation Using PMG and MG Methods

long-run estimations				
Methodes	**PMG**		**MG**	
Variables	Coefficient	P-value	Coefficient	**P-value**
Lncpi	-0.7908341	0.001	-2.33227	**0.545**
Short-run estimations				
Methodes	**PMG**		**MG**	
Variables	Coefficient	P-value	Coefficient	**P-value**
CointEq(-1)	-0.579305	0.000	-0.643629	**0.000**
Lncpi	0.6403385	0.000	-0.4332097	**0.1618**
cons	12.6633	0.000	12.4162	**0.000**
Hausman-Test	H-Stat		**P-Value**	
	0.7272		**0.12**	

*The probabilities are significant at 5 %

**The probabilities are significant at 10 %

Source: Prepared by the researcher based on Stata15.

From the results in Table (3) regarding the (PMG) estimators, it is evident that the error correction term CointEq(-1) is negative (-) and statistically significant at the 5% level, as indicated by the probability statistics. This result aligns with the findings of the cointegration test according to Pedroni (2004). The estimated value of the error correction term CointEq (-1) is -0.5793058, implying that 57.93% of the deviation in equilibrium in the previous period (year) of the foreign direct investment variable (lninv) is rectified in the current period.

The results of the Panel Mean Group (PMG) estimators for the long term reveal a negative relationship at a 5% significance level between the Corruption Perceptions Index (lncpi) and Foreign Direct Investment (lninv) in the studied emerging countries. An increase in the Corruption Perceptions Index by one unit leads to a decrease in Foreign Direct Investment by 0.5093%, assuming other factors remain constant. This finding aligns with the majority of previous studies discussed at the beginning of the research, confirming the validity of the first hypothesis while rejecting the second one.

These results further support the assertion that corruption has a direct impact on the quantity and quality of foreign investment resources. In a time when emerging nations strive to attract foreign investment resources, corruption hampers these inflows and can even disrupt them. This could contribute to a decline in tax revenue productivity and subsequently lower human development indicators. Moreover, it could become a burden on the state's resources and discourage foreign investors from investing, fearing the detrimental impact of corruption on their investments.

Furthermore, the Panel Mean Group (PMG) estimators for the short term, using the Error Correction Model, reveal a statistically significant positive effect of the Corruption Perceptions Index on Foreign Direct Investment. When the Corruption Perceptions Index increases by one unit, assuming other factors remain constant, this leads to a 0.6403% increase in Foreign Direct Investment. This outcome contrasts with the long-term relationship, suggesting a delayed response of foreign investors to the spread of corruption in the host country.

It can be argued that foreign investment inflows are associated with factors that have a more immediate impact, particularly political and economic stability, anticipated growth rates, the development of infrastructure and government services, the cost of doing business, market size, and regulatory laws. These factors may overshadow the short-term reaction of foreign investors to corruption, indicating that the impact of corruption on foreign investment decisions becomes more pronounced in the long term.

5.Granger Causality Test:

This test is used to determine the direction of causality between the study variables. It clarifies whether the causality is unidirectional, bidirectional, or if both variables are independent of each other. Upon its application to our study data, the results are outlined in the following table:

Table 4. Results of the Granger Causality Test

VAR Granger causality			
Dépendent variable : lninv			
Excluded	**Chi-sq**	**df**	**Prob.**
lncpi	1.306577	2	**0.5203**
All	1.306577	2	**0.5203**
Dependent variable : lncpi			
Excluded	**Chi-sq**	**df**	**Prob.**
lninv	3.826056	2	**0.1476**
All	3.826056	2	**0.1476**

Source: Prepared by the researcher based on Eviwes12

According to the preceding table, we accept the null hypothesis and dismiss the alternative hypothesis based on the critical probability value corresponding to Fisher's statistic, which stands at 0.5203, exceeding the 5%. Thus, it can be concluded that there is no causal relationship between perceptions of corruption and foreign direct investment. This aligns with the majority of previous studies, which suggested that foreign investment in developing countries is associated with other primary determinants, and a causal relationship between foreign direct investment and levels of corruption is absent.

6.Conclusions and recommendation

The study investigated the impact of corruption on foreign direct investment within a sample of developing countries during the period 2005-2020. We undertook a meticulous evaluation using cross-sectional data stability analysis alongside a common integration test. Subsequently, a comparative analysis was conducted between the Mean Group estimator (MG) and the Pooled Mean Group estimator (PMG), finding that the PMG method was the most suitable for our estimation purposes. Its results indicated a long-term inverse relationship between corruption and foreign direct investment in the developing countries under consideration. This aligns with the majority of previous studies mentioned at the inception of this paper, confirming the notion that corruption has a direct impact on the volume and quality of foreign investment resources. It may hinder investment and contribute to a regression in human development indicators, potentially burdening a country's resources.

Corruption negatively affects foreign investment by weakening economic sectors' performance, stifling economic growth, destabilizing the investment milieu, increasing project costs, impeding the transfer of technology, and reducing the efficacy of investment incentives. Corruption is considered a harmful tax and an investment obstruction, reducing the incentive for investors. Entrepreneurs operating within corrupt environments face additional burdens as they must pay bribes for various project-related procedures, permits, and documentation. This invariably results in an escalation of operational costs, a phenomenon particularly pronounced for small to medium-sized ventures, ultimately reducing investors' motivation. In the short term, as discerned through the error correction model, the corruption perception index variable did not exhibit a significant impact on foreign direct investment. This delay in the foreign investor's response to the spread of corruption in the host countries stands as a plausible interpretation of our findings.

In light of these insights, this study recommends that developing countries focus on building strong institutional frameworks to combat corruption in all its forms, particularly revenue-related corruption. Additionally, it calls for the promulgation of novel tax statutes and fee structures, meticulously aligned with contemporary global economic trends. Furthermore, it underscores the imperative of simplifying bureaucratic processes pertinent to economic transactions, to prevent the spread of corruption across various sectors.

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