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Do Corruption and Trade Openness Impede FDI?

ABSTRACT

Foreign direct investment (FDI) has been given much attention in the recent past just because of its contribution to economic development. However, there are several socio-economic factors that impede FDI. Therefore, the objective of current study is to probe whether corruption and trade openness affect FDI. The study uses data from 1990-2015 for SAARC countries and employs panel ARDL model to retrieve short- and long-run results. The findings reveal that corruption plunges the FDI in long-run, while trade openness increases FDI. On the contrary, we report heterogeneous results in short-run. Additionally, we deduce a few policy implications based on the findings of this study.

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1. INTRODUCTION

Foreign direct investment (FDI) is one of the indispensable factors that contributes to economic growth of both developed and developing countries. There is plethora of studies which reports that FDI ameliorates economic development, income inequality, poverty, and unemployment (Feridun & Sissoko, 2011; Herzer et al., 2014; Magombeyi & Odhiambo, 2018; Zeb et al., 2014). Given the imperativeness of FDI, countries try to escalate it. However, social, economic, and political situation of developing countries hinders FDI inflows, which mitigates sustainable economic development and economic welfare. Thus, it is necessary to probe the influencing factors of FDI especially for developing countries.

Parallel to this, corruption has been an imperative socio-economic issue across the globe. Over the time, corruption has surged in almost each and every county. On the top of its social impact, corruption also has economic impacts (Alola et al., 2019). The prior literature notes that corruption has both positive and adverse effect on GDP growth. Several studies conclude that corruption is grease for the economic wheel, implies that corruption increases GDP growth (Leff, 1964; Acemoglu & Verdier, 1998). On the contrary, there exists a strand of literature which reports that corruption hinders economic growth (Farooq et al., 2013). Moreover, corruption can also affect FDI. There are several studies which report that corruption effects FDI, however, there is dearth of literature that explores the relationship between corruption and FDI for developing countries. Hence, there is need to examine the impact of corruption on FDI to devise policies in order to ameliorate FDI inflows in developing countries.

In addition to this, Trade Openness (TO) be regarded as one of the prime factors that affect FDI. However, TO can either increase or plunge FDI. TO, through free trade agreements and low trade barriers, can attract FDI inflows. Whereas, TO can mitigate FDI through exchange rate and interest rate. The relationship between TO and FDI is ambiguous, therefore, it should be re-investigated for developing countries to provide additional evidence, which can complement the existing related studies.

Given the above backdrop, the study aimed at probing the effect of corruption and TO on FDI for selected SAARC countries: namely Pakistan, India, Maldives, Bhutan, Sri Lanka, Bangladesh and Nepal. The SAARC countries are set of developing countries that grow at impressive speed along with several socio-economic issues (e.g., corruption). The present study extends the existing body of knowledge by probing the impact of corruption and TO on FDI for SAARC countries. To the best of our knowledge, there does not exist any study that analysis the aforementioned objective in the case of SAARC countries.

2. LITERATURE REVIEW

The current section highlights previous research related to corruption, trade openness, and FDI. Mauro (1995) conclude that corruption impedes FDI. Similarly, Epaphra and Massawe (2017) employ corruption perception index and control of corruption (as proxies for corruption) and conclude that corruption decreases FDI.

On the contrary, Peres (2018) notes that corruption increases the FDI inflows in developing countries while there is negative relationship between corruption and FDI for developed countries. Similarly, Azam et al. (2013) reveal that corruption boosts the FDI inflows. The modern literature regarding foreign direct investment and corruption has not reached at final decisive solution. Some researchers provide evidence that corruption negatively affect foreign direct investment, while some favor that corruption lead to more friendly environment for foreign investors. Woo and Heo (2009) empirically test the relationship between level of corruption and foreign direct investment in context of non-OECD Asian countries. The study concluded that corruption in non-OECD countries retard FDI level.

Similarly, Cuervo-Cazurra (2006) probes the impact of corruption on investment inflow for 106 host countries. The study concluded that investors belong to OECD member countries not hesitate to do investment in countries with high degree of corruption. The ground reality is that investors formalized with corrupt officials to deal in such environment are well known for them. Alemu et al. (2011) empirically verified that corruption decline investment. The researchers reached to decisive point that corruption adversely affect economic sovereignty by incorporating insecurity and unconducive relationship, which badly hit inflow of FDI.

Bellos and Suasat (2012), and Helmy (2013) also report the negative impact of corruption on FDI for several set of countries. On the other hand, recent study by Gossel (2018) for Sub-Saharan African region concluded that corruption boost FDI inflow. However, Dinko et al. (2001) note that corruption is harmful for the overall economy, because it effects the state's regulation. Also, the study finds that foreign direct investment is negatively correlated with corruption. Moran (2012) argues that, although FDI ameliorates the welfare of the society yet it exerts adverse effects on various sectors. In addition to this, corruption started to increase, and if there persists more corruption then more FDI will inflow.

Parallel to this, Ang (2008) concludes that trade openness, financial development, and infrastructure increase FDI inflows.. The findings conclude that trade openness positively and significantly affect FDI. Kakar and Khilji (2011) also examine the nexus between FDI and trade openness in case of Malaysia and Pakistan. The results report that there is positive relationship between FDI inflows and trade openness in case of both countries. Abrego (1999) conclude that trade openness plunges FDI in Costa Rica and OECD countries. Babatunde (2011) reveals the relationship between trade openness and FDI. Also, FDI merely depends on trade openness. Adebayo et al. (2021) investigate the relationship between FDI and selected macroeconomic variables. For this analysis, authors employ wavelet approach, ARDL, FMOLS, and DOLS methodologies. The results depict that trade both openness and exports have positive impact on FDI inflows.

Similarly, Liargovas and Skandalis (2012) also report that FDI in developing countries has positive relationship with trade openness, and the strength of the relationship is relatively strong for developing economies. Aizenman and Noy (2006) explain that two way causality between FDI and trade openness exists for selected dataset. Cantah et al. (2018) argue that trade openness has positive impact on FDI inflows, while analyzing Sub-Saharan Africa. Bibi et al. (2014) scrutinize the relationship of FDI with selected macroeconomic variables, i.e., inflation, trade openness, real exchange rate, export, and import in Pakistan. Contrary to the existing literature, the study notes that trade openness impedes FDI inflows in Pakistan.

3. DATA

The key purpose of this study is to probe the effect of corruption and TO (trade openness) on FDI (foreign direct investment) for SAARC countries. Hence, the dependent variable of this analysis is FDI, whereas the key independent variables are corruption (measured by corruption perception index – CPI) and TO. In addition to this, we employ economic growth (real GDP per capita – GDP) as control variable. The study covers the time 1990-2015 for SAARC countries: namely Pakistan, India, Maldives, Bhutan, Sri Lanka, Bangladesh and Nepal. We exclude Afghanistan from this analysis since the data for Afghanistan is not available. Also, we transform all data series into natural logarithmic form to control the issues of non-normal distribution and heterogeneity. Table 1 reports the summary of data.

The descriptive statistics are presented in Table 2. Also, all variables are converted into logarithmic form to control heterogeneity and to achieve normal distribution. Further, as can be seen from Table 2 that mean value is highest for GDP, which is 13.22. On the contrary, CPI has lowest mean value, which is 1.65. The most volatile variable of this analysis is FDI since the standard deviation for FDI is 0.43. Kurtosis explains that variables of this study do not have thick tails. Moreover, all selected variables are negatively skewed,

as can be seen from the values of skewness. Additionally, Jarque-Bera test statistics reveal that all selected variables are non-normally distributed.

Table 1: Data description

Variable	Measurement scale	Source
Foreign Direct Investment (FDI)	Percentage of flows in country relative to GDP	World Development Indicators
Corruption Perception Index (CPI)	An index based on 13 different assessments and surveys about perceived corruption in a country	Transparency International
Trade Openness index (TO)	Volume of exports plus imports divided by GDP	World Development Indicators
Real GDP per capita (GDP)	Constant per capita $2005	World Development Indicators

Table 2: Descriptive statistics

	FDI	CPI	GDP	*TO*
Mean	6.38	1.65	13.22	10.28
St. Dev.	0.43	0.31	0.27	0.22
Kurtosis	2.11	1.98	1.87	2.32
Skewness	-0.10	-0.09	-0.17	-0.21
Jarque- Bera	(0.00)***	(0.00)***	(0.00)***	(0.00)***

Note: All variables are transformed into logarithmic form. (.) denotes P-value. Further, ***, **, * represents level of significance at 1%, 5%, and 10%, respectively.

4. METHODOLOGY

There are several channels through which corruption and trade openness effect FDI. For instance, corruption affects GDP growth, inflation, crimes, inequality, and cost of production. On the other hand, these aforementioned indicators mitigate FDI. Moreover, corruption propels foreign investors to pay bribe, thus it discourages foreign investors to invest in a host country. In addition to this, corruption promotes inefficiency, rent seeking, and merit-ignorance, causing FDI to plunge. Similarly, it is perceived that investors are biased toward open economies. Further, less restrictions on trade and capital flows encourage foreign investors to invest in host countries.

In the prior studies on the determinants of FDI (foreign direct investment), several economic indicators have been embodied as potential drivers of FDI. However, the most widely employed determinants are GDP per capita and trade openness index. Therefore, we also use these aforementioned variables in our econometric model. In addition to this, we augment our model by incorporating corruption as another determinant of FDI. The econometric model that we employ in this analysis is reported as follow:

$$FDI_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 TO_{it} + \beta_3 CPI_{it} + \varepsilon_{it} \quad (1)$$

In Eq. (1), FDI, GDP, TO, and CPI is foreign direct investment, real GDP per capita, trade openness index, and corruption perception index, respectively. Subscripts i and t are cross-sectional units and time, respectively. Additionally, β_i (i= 0, …, 3) is coefficient, whereas ε_{it} is error term.

To investigate the dynamic relationship (i.e., short- and long-run estimates) among corruption (CPI), TO, and FDI, the present study utilizes panel ARDL model developed by Pesaran et al. (1999). Further, we employ PMG-ARDL specification of panel ARDL in lieu of MG-ARDL and DFE due to the fact that PMG-ARDL renders homogeneous long-run estimates across all cross-sections. Also, panel ARDL (e.g., PMG-ARDL) can be applied if the variables follow diverse order of integration (i.e., I(0) or/and I(1)). Moreover,

panel ARDL is immune to panel data issues, e.g., cross-sectional dependence and heterogeneity. These aforementioned reasons compel to employ panel ARDL in this study.

5. IMPLICATIONS AND SUGGESTIONS

5.1. Unit Root Test

Panel ARDL is not applicable if the order of integration in at I(2) or higher, therefore, we discern the order of integration for all data series by employing Levin et al. (2002) unit root test. The findings from the aforementioned test are posted in Table 3.

Table 3: Results from LLC unit root test

Variable	I (0)	I (1)
FDI	-0.88	-4.23***
CPI	-2.87	-2.95***
TO	-1.06	-3.84**
GDP	-6.22	-6.18***

Note: *, **, *** denote level of significance at 10%, 5%, and 1% respectively.

As Table 3 explains that unit root exists in all variables at I(0). However, all data series are integrated at I (1), implies that data do not have unit root at first difference. In addition to this, we also employ CIPS unit root test for robust findings. The results from CIPS unit root test are mentioned in Table 4.

Table 4: Results from CIPS unit root test

Variable	I (0)	I (1)
FDI	-1.01	-2.88***
CPI	-2.13	-3.63***
GDP	-0.79	-2.71***
TO	-1.56	-2.60***

Note: Critical value at 1% is -2.57. *, **, *** denote level of significance at 10%, 5%, and 1%, respectively.

The findings from CIPS unit root test, reported in Table 4, explain that we fail to reject the null hypothesis of there is unit root at I(0). On the contrary, the null hypothesis could be rejected at I(1). Thus, all selected variables of this analysis are integrated of order 1.

5.2 Long-run estimates

This section renders long-run results from panel ARDL approach. Further, Table 5 explains that the CPI (corruption perception index) is negative as well as statistically significant. The value of -0.12 implies that a 1% escalate in CPI decreases FDI by 0.12%. The possible reason behind the finding could be this, that, corruption reduces the profit due to increase in the cost, which propel investors not to invest in country with high corruption perception index. This finding, of the present study, is in line with the conclusion of Ohlsson (2007).

Moreover, TO is also both positive and significant. The value of 0.08 indicates that 0.08% increase in FDI is fostered by a 1% increase in TO. The possible reason for this finding could be the reality that an open economy attracts more FDI as compare to the economy that imposes relatively high trade barriers. This conclusion of the present study is in line with the findings of Ang (2008). The coefficient of control variable (i.e., economic growth) is positive yet statistically significant. Also, this describes that, in long-run, economic growth does not boost FDI in SAARC countries.

Table 5: Long-run results from panel ARDL

Variable	Coefficient	Prob.
CPI	-0.12	0.00***
TO	0.08	0.00***
GDP	0.03	0.12

Note: *** represents level of significance at 1%.

5.3. Short-run estimates

Table 6 reports short-run results from panel ARDL approach. Further, the ECT (error correction term) is negative as well as statistically significant. It indicates that 96% of a shock converges in 1 year. Moreover, lag of TO is negative yet statistically significant. This implies that a 1% increase in TO plunges FDI by 0.07%. In addition to this, all short-run estimates are statistically insignificant. This indicates that CPI and GDP do not effect FDI.

Table 6: Short-run results from panel ARDL

Variable	Coefficient	Prob.
CPI	-0.71	0.18
CPI (-1)	0.15	0.65
TO	-0.03	0.55
TO(-1)	-0.07	0.01**
GDP	-0.02	0.57
GDP (-1)	-0.05	0.74
ECT	-0.96	0.03**

Note: ** denotes level of significance at 5%.

4.4. Country-wise short-run estimates

Table 7 reports the country-wise short-run estimates. The ECT (error correction term) in case of all countries is negative as well as significant. Moreover, this implies that there exists co-integration among CPI, TO, FDI, and GDP. Also, in short-run, CPI mitigates FDI in all SAARC countries except Bangladesh and India, where CPI escalates FDI. Further, TO upsurges FDI in case of India, Maldives, and Sri Lanka. However, CPI decreases FDI in case of Bangladesh, Bhutan, Nepal, and Pakistan. In addition to this, GDP escalates FDI in all selected countries except Bangladesh, where there exists insignificant relationship between GDP and FDI.

Table 7: Country-wise short-run results

Variables	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Srianka
ECT	-0.07 **	-3.39***	-0.45 ***	-0.21 **	-0.19***	-0.27 **	-0.18 ***
CPI	0.75 **	-0.61***	0.06	-2.34 ***	-0.072**	-0.72 *	-0.14***
TO	-0.06 ***	-0.27***	0.16 **	0.05 *	-0.02 **	-0.12 ***	0.05**
GDP	0.02	-0.03 ***	0.15 ***	0.06***	-0.02 **	0.32 *	0.01 *

Level of significance: * denotes 10%, ** denotes 5%, and *** denotes 1%.

6. CONCLUSION

FDI (foreign direct investment) is an inevitable ingredient that contributes to sustainable economic development. However, several factors hinder FDI inflows in developing countries. Hence, the current study explores whether corruption (CPI) and trade openness (TO) impede FDI in case of SAARC countries. We borrow panel ARDL methodology to examine the short and long-run estimates. The findings reveal that CPI decreases the FDI in long-run, whereas TO escalates the FDI in long-run. Further, we report heterogeneous results in country-wise short-run analysis.

On the basis of present study's findings, we propose that government officials and policy makers should control corruption by initiating ethical and moral building programs. Further, there should be laws, rules, and punishment (e.g., imprisonment) to control corruption. In addition to this, SAARC countries should move towards cash-less economy in order to mitigate corruption. Parallel to this, SAARC countries need to cut the trade barriers to ameliorate FDI. The policy makers and government officials should rationalize the trade barriers and adopt trade liberalization for high FDI inflows. Governments should provide incentives to foreign investors who wants to invest in host countries. Additionally, there should be tax exemption schemes and subsidies to foreign investors. The cost of commencing and doing business is relatively high in developing countries, therefore, policy makers should devise policies to reduce these type of costs. Further, policymakers should sign agreements on free trade, which will surge trade openness that ultimately increases FDI inflows in SAARC countries.

There exist a few limitations of this study. First, we ignore the issue of cross-sectional dependence and slope heterogeneity, which may lead to spurious results. Second, we do not employ co-integration test explicitly and test co-integration with the help of ECT (error correction term). For future research directions, researchers can employ second and third generation panel data methods to control cross-section dependence and slope heterogeneity. Further, quantile based models could also be used to explore the non-linear (asymmetric) relationships.

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