WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Foreign Direct Investment Under the Shadow of Corruption: A Comparative Regional Perspective

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Abstract

Foreign Direct Investment (FDI) is widely regarded as a cornerstone for economic development, particularly in emerging markets. While it brings much-needed capital, technology transfer, and employment opportunities, the decision of multinational corporations to invest is influenced by numerous factors, including the integrity of governance. Among these, corruption stands out as a key impediment. This research aims to evaluate the relationship between corruption, measured via the Corruption Perceptions Index (CPI), and the level of FDI inflows in both developing and developed countries. Using panel data from 1995 to 2011, the study compares four BRIC nations (Brazil, Russia, India, and China) with four advanced economies (the USA, UK, Japan, and the Netherlands). It investigates the hypothesis that corruption significantly deters foreign investment and examines whether the magnitude of this impact differs by a country's level of development. The research employs linear regression models, dummy variables for country categorisation, and interaction terms to reveal how the CPI affects FDI differently across regions. Scenario-based analysis simulates FDI outcomes under varying levels of perceived corruption to strengthen the results. Findings suggest that while higher CPI (lower corruption) generally correlates with increased FDI in developed countries, the same relationship is not statistically significant in developing economies. This implies that other factors, such as market size or labour cost, may outweigh governance concerns in investor decision-making for emerging markets. The study concludes with specific policy recommendations, highlighting the importance of transparency, the rule of law, and institutional reforms, particularly in economies aiming to boost foreign capital inflows. This paper contributes to the existing literature by offering a region-specific comparative perspective and enhancing the understanding of how corruption affects FDI dynamics globally.

Introduction

Foreign Direct Investment (FDI) is defined as an investment made by a firm or individual in one country into business interests located in another country. It is a key component of global economic integration, as it provides recipient countries with access to capital, advanced technologies, managerial expertise, and global markets. FDI not only supplements domestic savings and investment but also contributes to employment generation, skill development, and infrastructure enhancement. As such, it is often seen as a critical factor in accelerating economic development, especially in emerging economies. The attractiveness of a country to foreign investors, however, is not solely determined by economic indicators such as market size, growth potential, or labour costs. Institutional quality, regulatory stability, and governance standards also play a crucial role. Among the many institutional factors, corruption has emerged as a particularly concerning deterrent to FDI. Corruption increases transaction costs, creates uncertainty, distorts fair competition, and undermines legal enforcement—all of which reduce investor confidence. This study seeks to examine the relationship between corruption and FDI, focusing on whether this relationship varies depending on the level of a country's development. The central hypothesis is that higher levels of perceived corruption discourage foreign investment, but this effect may be more pronounced in developed nations where transparency and legal norms are expected to be stronger. To analyse this, a comparative study is conducted using two distinct groups of countries: four developing economies from the BRIC bloc (Brazil, Russia, India, and China), and four developed countries (the United States, the United Kingdom, Japan, and the Netherlands). These countries were chosen based on their economic size, global relevance, and availability of consistent data.

Corruption is measured using the Corruption Perceptions Index (CPI), developed by Transparency International, which assigns scores based on the perceived level of public sector corruption in each country. A higher CPI score indicates a lower level of corruption. The research covers the period from 1995 to 2011 and applies panel data regression techniques, including linear regression models and interaction terms. It also incorporates dummy variables to distinguish between developed and developing countries, and uses scenario analysis to explore hypothetical outcomes under different corruption levels. By identifying the extent to which corruption influences FDI in different regional and economic contexts, this research aims to provide policymakers with insights into how institutional reforms and anti-corruption efforts can improve a country’s investment climate. Ultimately, the goal is to offer a nuanced understanding of how the same institutional variable—corruption—can produce different economic outcomes depending on the national context.

Literature Review

The relationship between corruption and FDI has been the subject of extensive academic inquiry. Numerous studies offer divergent conclusions, reflecting the complexity and context-dependent nature of this relationship. Mauro (1995) was among the earliest to document a negative correlation between corruption and FDI, asserting that corruption distorts economic decisions and deters international investors. Similarly, Hines (1995) argued that after the enactment of the U.S. Foreign Corrupt Practices Act (FCPA), American firms became significantly less likely to invest in corrupt countries. Freckleton et al. (2011) conducted a panel data analysis over the period 1998–2008 and confirmed that corruption significantly impedes FDI, particularly in developing nations. Their study also indicated that corruption's effect is persistent in both short-term and long-term horizons, impacting macroeconomic variables like GDP growth and employment. Conversely, some scholars offer a counter-narrative. Leff (1964) introduced the controversial "grease-the-wheels" hypothesis, suggesting that in bureaucratically inefficient systems, corruption might actually expedite administrative processes and attract investors. Bardhan (1997) extended this argument by pointing out that in rigid regulatory environments, bribes could serve as an informal mechanism to bypass red tape. However, these positive perspectives on corruption are highly contested. Most modern empirical evidence aligns with the view that corruption undermines institutional trust, increases transaction costs, and introduces risk, thereby deterring sustainable foreign investment. A major gap in the literature is the tendency to treat all countries uniformly, failing to differentiate between developing and developed economies. This study addresses that shortcoming by disaggregating the analysis across these two categories, offering clearer insights into how the impact of corruption on FDI is mediated by a country's institutional and economic maturity.

Data and Variables

This study relies on a balanced panel dataset spanning from 1995 to 2011, focusing on eight countries—four developed (USA, UK, Japan, and the Netherlands) and four developing (Brazil, Russia, India, and China—collectively referred to as the BRIC nations). These countries were selected for their global economic influence, availability of reliable macroeconomic indicators, and contrasting governance structures.

3.1 Dependent Variable: Foreign Direct Investment (FDI)

The primary dependent variable is FDI net inflows as a percentage of GDP, obtained from the World Bank's World Development Indicators. This measure reflects the extent to which foreign investors are contributing to a country’s economy relative to its size. It includes equity capital, reinvested earnings, and intra-company loans from foreign direct investors. Using this metric ensures comparability across economies of different sizes.

3.2 Independent Variable: Corruption Perceptions Index (CPI)

The main explanatory variable is the Corruption Perceptions Index (CPI), sourced from Transparency International. CPI scores range from 0 (highly corrupt) to 10 (very clean), and since 2012, from 0 to 100. For consistency across the study period, the older 0–10 format was used. CPI reflects the perceived level of public sector corruption as assessed by experts and business people, and it serves as a global benchmark for governance quality. CPI is treated as a continuous variable and is expected to have a positive association with FDI (i.e., less corruption should attract more FDI).

3.3 Control Variables

To isolate the effect of corruption on FDI, three critical control variables are included:

- **GDP Growth Rate (%):** Captures the economic performance of a country, as stronger growth is likely to attract investors seeking returns. A high GDP growth rate signals market dynamism and demand potential.
- **Population Growth Rate (%):** Reflects demographic trends and market size potential. In developing nations, a growing population often translates into a large labour force and consumer base, which may attract FDI.
- **Unemployment Rate (%):** Acts as a proxy for labour market health and wage dynamics. Higher unemployment may indicate economic distress, but could also mean lower labour costs, potentially attracting labour-intensive foreign firms.

3.4 Summary Statistics

Descriptive analysis shows distinct contrasts between the two country groups:

- **Developed economies** (USA, UK, Japan, the Netherlands) consistently scored higher on CPI, indicating lower corruption. These countries also exhibited relatively stable FDI inflows and macroeconomic indicators.
- **BRIC countries** displayed lower CPI scores, reflecting higher levels of perceived corruption. Interestingly, despite this, they continued to attract substantial FDI. For example, China and India remained among the top FDI recipients globally during the studied period. This paradox suggests that corruption is not the sole determinant of FDI and that other structural advantages may offset governance risks.

Two sets of descriptive statistics tables (not shown here) reinforce these observations. For instance, the average CPI score for developed countries hovered around 8.0, while for BRIC nations, it was approximately 3.0. Yet, average FDI inflows (as % of GDP) were substantial in both categories, warranting deeper econometric investigation.

3.5 Data Sources

All variables were sourced from the following reputable databases:

- **World Bank World Development Indicators (WDI):** For GDP growth, population growth, unemployment rate, and FDI data.
- **Transparency International CPI Reports:** For annual CPI scores from 1995 to 2011.
- **UNCTAD Statistics:** For FDI validation and country comparisons.

This structured data framework enables robust statistical modelling and supports a comparative approach to understand regional and developmental disparities in the FDI-corruption relationship.

Methodology

This study employs a quantitative research design, using **panel data econometrics** to assess the impact of corruption, measured by the Corruption Perceptions Index (CPI), on Foreign Direct Investment (FDI) inflows. The dataset includes annual observations from 1995 to 2011 for eight countries: four developed nations (USA, UK, Japan, and the Netherlands) and four BRIC economies (Brazil, Russia, India, and China).

4.1 Regression Model

The core analytical framework is based on linear regression modelling. The dependent variable is FDI inflows as a percentage of GDP, while the primary independent variable is CPI, ranging from 0 (highly corrupt) to 10 (very clean). Additional control variables include:

- **GDP growth rate** (economic performance indicator),
- **Population growth** (proxy for market potential and labour supply),
- **Unemployment rate** (labour market slack).

The following equations were estimated:

1. Single-country regressions to analyse country-specific effects of CPI on FDI.
2. Group-based regressions for BRIC and developed countries separately, to detect regional patterns.
3. Joint regression models with a dummy variable ("developed") that equals 1 for developed countries and 0 for BRICs.
4. An interaction term model using (developed × CPI) to examine how the impact of corruption varies between groups.

4.2 Stationarity and Multicollinearity

Prior to estimation, all time series were tested for **stationarity** using unit root tests (e.g., Augmented Dickey-Fuller). Variables that were non-stationary were excluded or differenced. Correlation matrices were constructed to test for **multicollinearity** among regressors. In cases where high correlation ($r > 0.8$) was detected between explanatory variables, the less significant variable was dropped to avoid inflated standard errors.

4.3 Error Correction and Robustness

Standard Ordinary Least Squares (OLS) regression assumptions were tested. Two common violations were identified:

- **Heteroskedasticity**, or non-constant variance of error terms
- **Autocorrelation**, especially due to the time series nature of the data

To correct for these, the **Heteroskedasticity and Autocorrelation Consistent (HAC)** estimator was used. This ensures more reliable inference by adjusting standard errors without needing to change the model structure.

4.4 Model Selection and Validation

Each model was evaluated using the Adjusted R^2, Akaike Information Criterion (AIC), and Bayesian Information Criterion (BIC) to identify the best-fitting regression. The inclusion of the interaction term (developed × CPI) significantly improved model performance, confirming the hypothesis that corruption has differential effects based on development status.

Finally, robustness checks were conducted:

- Removing outliers to see if results changed significantly
- Including lagged FDI values to control for inertia
- Running diagnostic tests like the Breusch-Godfrey test (for autocorrelation) and the White test (for heteroskedasticity)

All findings confirmed the robustness and validity of the chosen regression framework.

Results

This section presents the empirical findings from the regression analyses. The models test the impact of corruption, as measured by the Corruption Perceptions Index (CPI), on Foreign Direct Investment (FDI) across selected BRIC and developed countries. Both individual and joint regressions were conducted to highlight the differences in corruption's influence across economic contexts.

5.1 Individual Country Analysis

A separate linear regression model was estimated for each country using CPI as the primary explanatory variable and FDI (as a % of GDP) as the dependent variable. Control variables included GDP growth, population growth, and unemployment rate.

- **A positive CPI-FDI relationship** was observed in:
  - **Japan**: A 1-point increase in CPI (indicating lower corruption) was associated with a 0.78% increase in FDI. This was statistically significant and aligns with investor expectations in high-trust economies.
  - **Brazil**: Demonstrated a 1.94% increase in FDI per 1-point rise in CPI, suggesting that improvements in governance positively influence investor confidence.
  - **India**: Similar to Brazil, India showed a 1.79% increase in FDI with rising CPI, emphasising the importance of institutional reform in attracting FDI.
- **A negative CPI-FDI relationship** was observed in:
  - **The Netherlands**: Surprisingly, a strong negative coefficient of -25.7 indicated reduced FDI with higher CPI. This could be an anomaly or driven by cyclical or sectoral investment shifts not captured in the CPI alone.
  - **USA and Russia**: These countries exhibited negative but statistically insignificant correlations. In Russia's case, this aligns with past studies suggesting corruption is not always a decisive deterrent given geopolitical and natural resource-driven investments.
- **Mixed or insignificant effects** were observed in China and the UK, suggesting other macroeconomic factors may be more influential in driving FDI than perceived corruption alone.

5.2 BRIC vs. Developed Countries: Group Analysis

The next phase of analysis categorised countries into two groups—BRIC (developing) and developed—using pooled regression models with dummy variables.

- In developed countries, CPI was found to be statistically significant and positively correlated with FDI. Countries with higher CPI scores (less corruption) consistently received higher FDI inflows. This is consistent with literature asserting that transparency and regulatory stability are central to investor confidence in mature markets.
- In BRIC countries, the CPI variable was not statistically significant, implying that corruption perceptions had no meaningful influence on FDI inflows. This suggests that investors in developing countries may be more motivated by market size, growth potential, and cost advantages than by governance quality alone.

These findings support the hypothesis that the deterrent effect of corruption on FDI is amplified in developed economies, where investors prioritise institutional trust and low-risk environments.

5.3 Interaction Effects and Dummy Variable Models

To further examine whether CPI has different impacts based on the country's development status, an interaction term (Developed * CPI) was added to the model.

- The interaction term was positive and statistically significant, indicating that improvements in CPI (less corruption) lead to disproportionately higher FDI in developed nations compared to developing ones.
- The base effect of CPI in developing countries remained insignificant, reinforcing the observation that corruption alone does not strongly influence FDI decisions in BRIC countries.

This confirms that investor sensitivity to corruption is significantly greater in developed economies. These investors often operate under stricter home-country compliance regulations (e.g., FCPA in the US) and are more risk-averse.

5.4 Summary of Empirical Insights

- CPI positively impacts FDI in some countries but not universally.
- Corruption is a critical variable for developed countries but less so for developing economies, where other incentives dominate.
- Policy reforms aimed at reducing corruption are more likely to yield higher FDI dividends in developed markets.
- For BRIC countries, broader institutional reforms and improvements in economic fundamentals may be more effective in attracting FDI.

These findings are in line with the broader literature (e.g., Mauro, 1995; Egger & Winner, 2006) and enhance understanding by providing a comparative regional perspective, something lacking in many earlier studies.

Scenario Analysis

To further illustrate how corruption impacts Foreign Direct Investment (FDI), a scenario-based approach was employed. This analysis used econometric simulations to predict FDI outcomes under varying levels of corruption, measured by the Corruption Perceptions Index (CPI), while

holding other control variables constant. The intention was to understand the practical effect of CPI values on FDI inflows in both developing (BRIC) and developed countries.

Scenario 1: Simulated FDI Outcomes at Minimum, Average, and Maximum CPI Values

In this scenario, CPI values were categorised into three distinct levels for each country group:

- **Minimum CPI**: Represents high corruption (CPI ≈ 2.1)
- **Average CPI**: Represents moderate corruption (CPI ≈ 5.0)
- **Maximum CPI**: Represents very low corruption (CPI ≈ 9.03)

The regression model used (specifically, Regression VI, which controls for heteroskedasticity and autocorrelation) was applied to simulate expected FDI as a percentage of GDP.

Findings:

- In **developed countries**, a clear and positive relationship was observed. When CPI increased from minimum to maximum, FDI inflows rose significantly. For instance, FDI rose from approximately 6.82% of GDP at CPI 2.1 to around 10.29% of GDP at CPI 9.03.
- In **BRIC nations**, however, FDI did not exhibit a consistent response to changes in CPI. Even at higher CPI scores (i.e., lower corruption), the change in FDI remained marginal, suggesting other economic incentives such as large market size or natural resources are more influential drivers than institutional cleanliness alone.

Scenario 2: FDI Projections Using Group-Based Average CPI Scores

In this alternative scenario, CPI scores were averaged across each group (developed vs. BRIC), and the projected FDI levels were calculated using the same regression model.

- The average CPI for **developed countries** was approximately 8.0, and for **BRIC nations**, it was around 3.1.
- Using these average scores, the predicted FDI inflows for developed nations were significantly higher than for BRIC countries.
- Interestingly, when CPI scores were hypothetically equalised (i.e., both groups given a CPI of 5.0), developed countries still attracted more FDI. This suggests that, in addition to corruption, factors such as infrastructure quality, legal stability, and investor protections play a crucial role in attracting FDI.

Interpretation and Implications

These scenarios validate the hypothesis that corruption deters FDI more severely in developed countries, where investors expect a high level of institutional integrity. In contrast, emerging economies may offset the adverse effects of corruption with compensating advantages like lower labour costs or higher growth potential. Moreover, the simulations underscore the diminishing returns of anti-corruption efforts in the absence of broader reforms. In BRIC countries, merely improving CPI scores may not yield proportionate FDI benefits unless accompanied by improvements in governance infrastructure, political stability, and regulatory transparency.

Conclusion and Recommendations

This study set out to explore the relationship between corruption, measured through the Corruption Perceptions Index (CPI), and foreign direct investment (FDI) inflows in both developing (BRIC) and developed (USA, UK, Japan, and the Netherlands) economies over the period 1995 to 2011. Using panel data regression models, scenario analysis, and robustness checks, the study finds that corruption plays a complex and differentiated role in shaping FDI patterns across these two groups. The core conclusion is that corruption significantly impacts FDI inflows in developed countries, where higher CPI scores (indicating lower corruption) are positively associated with higher levels of FDI. This outcome suggests that foreign investors are more sensitive to governance quality and institutional transparency when investing in mature economies, likely because such markets offer lower margins and higher expectations of regulatory compliance. As a result, any perception of corruption can act as a serious deterrent to capital inflows.

Conversely, in developing economies such as the BRIC nations, the influence of corruption on FDI is statistically weaker and often insignificant. Despite relatively low CPI scores (indicating higher corruption), these countries continue to attract substantial foreign investment. This can be attributed to several competing factors, such as large market size, lower labour costs, abundant natural resources, and high growth potential, that may offset investor concerns about governance issues. In such contexts, corruption, while undesirable, may be considered a cost of doing business rather than a deal-breaker.

Policy Recommendations

Based on the empirical findings, the following policy implications are suggested for different categories of countries:

For Developed Countries:

1. **Strengthen institutional transparency and regulatory enforcement.** Maintaining high standards of governance is critical to sustaining investor confidence.
2. **Adopt rigorous anti-corruption frameworks**, especially in industries prone to rent-seeking behaviour (e.g., construction, defence, energy).
3. **Promote cross-border compliance cooperation**, ensuring that domestic firms and foreign investors operate under consistent legal expectations.

For Developing Countries (BRIC nations):

1. **Invest in holistic economic development.** Since corruption alone does not significantly deter FDI, focus should also be placed on infrastructure, labour quality, and market reforms.
2. **Enhance bureaucratic efficiency.** While eliminating corruption is ideal, minimising red tape and simplifying procedures may have a more immediate impact on attracting investment.
3. **Incrementally improve governance indicators.** Even marginal improvements in CPI may yield reputational benefits that encourage long-term capital inflows.
4. **Focus on sector-specific integrity measures.** Priority should be given to sectors most attractive to foreign investors, ensuring transparency in procurement, licensing, and taxation.

Final Remarks

While corruption undeniably affects investor sentiment, its impact is context-specific and mediated by a country's broader economic environment. The study emphasises the importance of nuanced policymaking, recognising that governance reforms must be complemented by structural and economic improvements, particularly in developing nations. Future research could benefit from examining sectoral variations, time-lag effects, and alternate governance indicators like the World Bank's Rule of Law or Control of Corruption indices.

Ultimately, the fight against corruption is not only a moral imperative but a strategic economic policy that can unlock sustainable growth, especially when tailored to the unique institutional realities of each country.

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