

FDI AND INSTITUTIONAL QUALITY IN DEVELOPING ECONOMIES: A PANEL DATA ECONOMETRIC STUDY USING STATA

1. Background and Problem Statement

Foreign Direct Investment (FDI) is often influenced by both economic factors and the quality of governance in host countries. While macroeconomic stability and market size are well-researched, the role of institutional quality in attracting or deterring FDI requires further empirical analysis. This project addresses the gap by using a fixed-effect panel regression model to examine how institutional quality metrics affect FDI inflows across developing countries. The client required a clean, well-structured econometric report in Harvard format, with complete Stata code and interpretations.

2. Objectives

- To assess the effect of institutional quality on FDI inflows in developing countries
- To analyze panel data across multiple countries and years using Stata
- To incorporate interaction terms between institutional indicators and market size
- To ensure all statistical tests and diagnostics are included and results are reported in Harvard citation style

3. Methodology

3.1 Dataset

- **Countries:** 30 low and middle-income countries
- **Time Period:** 2005–2020 (balanced panel)
- **Variables:**
 - *Dependent Variable:* Log of FDI inflows (current USD)
 - *Independent Variables:*
 - Institutional quality (World Bank Governance Indicators): Control of Corruption, Government Effectiveness, Rule of Law
 - Market Size (GDP per capita)
 - Trade Openness (exports + imports as % of GDP)
 - Inflation Rate
 - Interaction Term: Government Effectiveness $\times$ GDP per capita

3.2 Software and Tools

- **Software Used:** Stata 17
- **Commands Used:** xtset, xtreg, fe, xttest0, vif, margins, esttab

3.3 Estimation Technique

- Panel fixed effects model selected after running Hausman test
- Clustered standard errors at country level
- Multicollinearity tested using VIF
- Heteroskedasticity checked with Breusch-Pagan LM test
- Model robustness verified with and without interaction term

4. Key Results

Regression Output (Fixed Effects):

- Government Effectiveness: $\beta = 0.41$, $p < 0.05$
- Control of Corruption: $\beta = 0.26$, $p < 0.1$
- Rule of Law: Not statistically significant
- GDP per capita: $\beta = 0.58$, $p < 0.01$
- Trade Openness: $\beta = 0.35$, $p < 0.05$
- Inflation: Negative and statistically significant
- Interaction (Gov. Effectiveness $\times$ GDP): Positive coefficient indicating stronger FDI inflow in more effective governance environments with rising income

Diagnostics:

- Hausman Test: $\chi^2 = 23.8$, $p = 0.002 \rightarrow$ Fixed effects preferred
- Breusch-Pagan: $\chi^2 = 0.61$, $p = 0.43 \rightarrow$ No heteroskedasticity detected
- VIF Scores: All $< 5 \rightarrow$ No multicollinearity

5. Interpretation and Insights

- Governance quality plays a crucial role in influencing FDI decisions
- Market size amplifies the effect of institutional quality (positive interaction term)
- Countries with better control of corruption and efficient governance attract more FDI

- Inflation reduces investor confidence, while trade openness encourages investment

6. Recommendations

- Policymakers should strengthen institutional governance and reduce corruption to attract stable FDI inflows
- Investment promotion strategies should target improving regulatory efficiency
- Macroeconomic stability, especially inflation control, remains a critical foundation

7. Deliverables

- .do file with commented Stata code
- Final report in Harvard referencing style (DOC and PDF formats)
- Regression output tables in publication-ready format using esttab
- Graphs for marginal effects and interaction plots
- Summary Excel sheet of descriptive statistics and regression coefficients

8. Stakeholder Relevance

Academic:

- Excellent resource for courses in Development Economics, Political Economy, and Applied Econometrics
- Useful for students learning fixed effects modeling and governance indicators analysis in Stata

Corporate:

- Insightful for international investment strategy teams analyzing risk-return based on governance indices
- Applicable for development consultancies advising investment climate reforms in emerging markets