

# Determinants of FDI Inflow Across Countries

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## I. Introduction/Lit Review

In the past handful of decades, Foreign Direct Investment (FDI) has emerged as a significant force shaping the global economy and pushing it towards further integration. As countries increasingly participate in the global marketplace, FDI has become a crucial channel for the movement of many economic factors such as the transfer of capital, technology, and managerial expertise across borders. Technological advancements in data science and communication have allowed researchers and policymakers to delve deeper into understanding the complex and dynamic nature of FDI as well as its determinants and the implications it carries for both host and source countries.

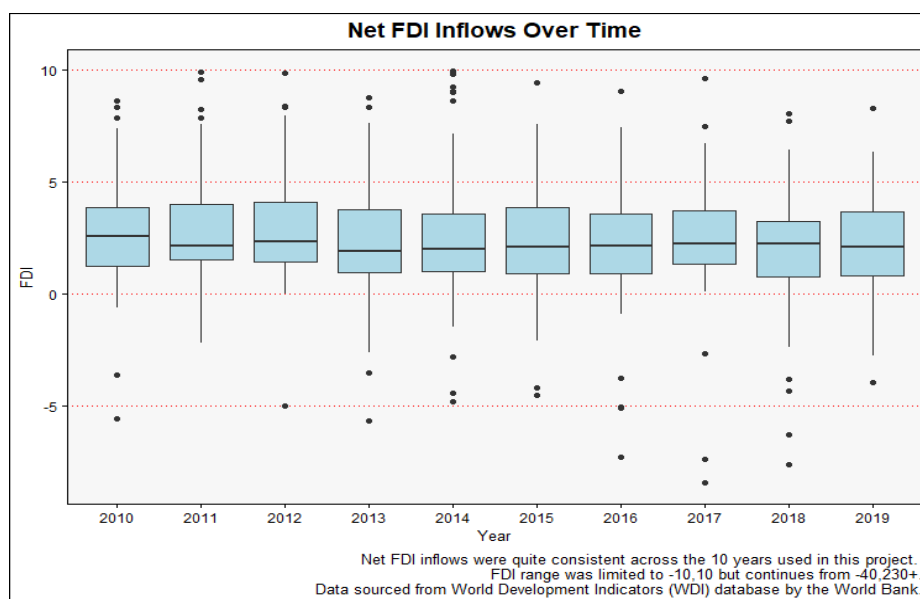
With the explosion of the study of FDI have come some commonly found determinants of FDI, both positive and adverse. Unfortunately, but not unsurprisingly, lower-income countries have somewhat fallen behind, specifically those in Sub-Saharan Africa and to a lesser extent the MENA countries. The detrimental commonalities they share seem to be strongly tied to the stability and reliability of the host. Countries with high levels of corruption and/or little global power seem to struggle in attracting investment home (Aziz & Mishra, 2015; Anyanwu, 2011). This is not a problem exclusive to lesser developed countries. The quality and clarity of financial and economic institutions are important in attracting even the most advanced economies (Dellis et al, 2017). Indeed, uncertainty surrounding potential investment costs and policy interventions by a host country seems to be one of the main deterrents to FDI (Canh et al, 2019). While lesser developed countries seem to be getting the short end of the FDI stick, the news is not all bad; market size and trade openness have positive effects on FDI inflows; so, just by opening themselves up to trade, lesser developed countries give themselves an opportunity to cyclical

positive effects of increasing size and openness in tandem. This also exposes them to some of the largest theoretical gains from FDI within the OLI framework in the transfer of knowledge and intellectual property to host firms.

Studying the determinants of FDI inflows across host countries is of paramount importance due to the myriad economic, technological, and social implications it entails. It is equally important to identify and avoid unwanted consequences of wanton or predatory investment. By unraveling the factors that attract FDI, researchers and policymakers can gain valuable insights into how to foster economic growth, promote technological advancement, enhance international trade, and ensure sustainable development.

## II. Data & Modeling

The panel data used for this research project was sourced from the World Development Indicators (World Bank). The range was limited to 10 years of annual estimates (2010-19) to avoid as many of the adverse effects from the two crises that bookended the 2010s. A total of 84 countries from all regions of the world were sampled to find common characteristics that span geographies, and cultures, and influence the level of investments these host countries receive.



FDI is being measured by the net inflows to the country with 0 representing balance with the amount invested abroad. Four of the commonly accepted and previously discussed main determinants of FDI inflow have been selected as the main covariates for this project, those are market size, trade openness, financial stability, and government effectiveness/uncertainty. Lastly, a vector of likely confounders,  $X$ , is also included with variables including environmental, financial, and social types. This ultimately results in my main econometric model:

$$FDI_{i,t} = \alpha * FDI_{i,t-1} + \beta * GDPgrowth_{i,t} + \gamma * FinancialStability_{i,t} + \lambda * Openess_{i,t} + \delta * GovEffectiveness_{i,t} + \omega_j * X_j + \epsilon_{it}$$

$FDI_{i,t}$  is the natural log of the net inflows to the host country. GDP growth is the proxy for market size. While sharing similar problems, I chose growth in favor of the level due to reverse causality problems. While any of the vars *could* work in the reverse, it is especially easy to see the relationship in the direction of investing in relatively safe/secure high-GDP countries. For financial stability, the proxy chosen is bank capital to asset ratios. Much of the literature uses financial credit but that indicator was suffering from a 66% completion rate for my sample with a variance high enough that I didn't feel comfortable imputing the data. Trade openness is measured with the standard CA as % of GDP. Government effectiveness is ranked on a scale of 0-100 and  $X$  is the previously mentioned vector of covariates. I've included a version of the dependent var lagged 1 period to make the model dynamic though not all my models use it. While the possibility of volatility exists, there is likely a large correlation between the FDI levels of bordering years.

I ran two main different estimation strategies to try and fit the theoretical model. First, I ran a simple OLS model with Fixed Effects for year and country both with and without the lagged dependent variable. While OVB and endogeneity are *probably* already present, the inclusion of the lagged dependent at least increases the chances that the predictor(s) will be correlated with

the error term. As a result, much of the literature pursues estimators such as a GMM, which can remain more efficient in the presence of dynamic effects and heteroskedasticity (Dellis et al, 2017). I chose to do a 2sls IV with the same FE, as I had no prior experience with GMM models; As it happens, both of the papers reported the GMM models for robustness only as IV appeared to perform well enough. Trying to stay close to the literature and Arellano-Bond methods, I chose higher value lagged dep. vars as my IVs (2 & 3 periods).

### III. Results

When I restructured my entire dataset to increase the statistical power with more observations, I had hoped to pull some significant values, but alas reality is disappointing. That being said, it's not the end of the world.

	<i>Dependent variable:</i>	
	<i>log(fdi_in)</i>	
	(1)	(2)
fdi_t1	0.0004 (0.001)	
gdp_pCapGr	0.077	0.076*** (0.015)
bank_cta	0.015	0.015
ca_pGDP	0.023	0.023
gov_rank	-0.002	-0.002
Observations	490	490
R <sup>2</sup>	0.772	0.771
Adjusted R <sup>2</sup>	0.729	0.730
Residual Std. Error	0.621 (df = 413)	0.620 (df = 414)
<i>Note:</i>	* p<0.1; ** p<0.05; *** p<0.01	

First, comparing my OLS FE models with (1) and without (2) the lagged FDI. The most surprising result in the table to me was the lack of FDI correlation across years. This is where the biggest divide in the literature takes place, I have a similar coefficient to (Anyanwu, 2011) in his study of African FDI who reports 3 stars of significance with a robust OLS estimator. But estimates range from close to mine to greater than .1, all with varying levels of significance. Robust SEs at all levels made no differences in significance for my estimates.

While the magnitudes differ from other literature, the direction of almost all the effects are as they

were expected. Market size, trade openness, and financial stability at least don't contradict other work even if they don't necessarily support it. While government rank is negative, I have two possible explanations. The first is a bad operationalization; I perhaps should have found the Economic Political uncertainty variable used by (Canh et al, 2019) that was made specifically for these scenarios and is likely more robust. The second explanation is that maybe lower-efficiency governments have more volatile net inflows driven by a reduced ability to invest

<i>Dependent variable:</i>	
	<b>log(fdi_in)</b>
<b>gdp_pCapGr</b>	0.027 (0.079)
<b>bank_cta</b>	0.026 (0.060)
<b>ca_pGDP</b>	-0.001 (0.039)
<b>gov_rank</b>	0.011 (0.021)
<b>'log(fdi_t1)(fit)'</b>	0.897 (1.651)
<b>Observations</b>	455
<b>R<sup>2</sup></b>	0.536
<b>Adjusted R<sup>2</sup></b>	0.443
<b>Residual Std. Error</b>	0.866 (df = 378)
<b>Note:</b>	* p<0.1; ** p<0.05; *** p<0.01

globally. Turning now to my 2sls model, I again am missing significant results but the use of the IV seems to have brought my coeff. on lagged FDI closer to the literature and with. That being said, this is still a lackluster performance from this model. I believe that the fault lies in my selection of an IV. I perhaps should have chosen an instrument with a stronger first-stage correlation.

#### IV. Conclusion

In conclusion, this research project aimed to explore the determinants of FDI inflows across host countries. The findings were a mixed bag, with some expected relationships but a lack of significant results overall. Market size, trade openness, and financial stability moved in the expected direction just not to the same magnitude. Government effectiveness, as measured in this study, showed a negative relationship with FDI, suggesting the need for alternative

measures of government uncertainty. The inclusion of lagged FDI in the models improved the alignment with existing literature. However, the overall results were not as robust as desired, possibly due to the choice of instrumental variables. Despite the limitations, I learned a new econometric technique and gained a deeper appreciation for the complexity of the ongoing dialogue on FDI determinants. And so, in my humble opinion, policymakers should continue to focus on improving market size, trade openness, financial stability, and government effectiveness to attract FDI and foster economic growth, technological advancement, and sustainable development in host countries.

## References

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