



THE EFFECTS OF CORRUPTION ON FDI INFLOW: THE CASE IN ASEAN FROM 1996 TO 2011

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Introduction

- + *ASEAN is now a popular destination for FDI flow:*
 - + Peculiar advantages: low labor, raw material costs, impressive economic growth, and many ***preferential policies*** to fascinate foreign investors.
 - . These will diminish once the economies move to a higher level;
 - . The cost to implement the preferential policies is considerable; and
 - . It is also difficult to sustain these preferences in the long term.
 - E.g., Vietnam: facing new challenges in attracting investment since the labor cost and commodity price surge.
 - => **The strategy of FDI attraction that based on the advantage of low costs will lose effectiveness in the long term.**
- + *Thus, attracting investment based on the improvements of investment environment through a high quality of human capital, modern infrastructure, and effective institutions need to be paid more attention.*

Objectives

The research questions:

- + Is the negative relationship between FDI inflow and Corruption level applied for ASEAN countries? And,
- + Whether the corruption level could influence to the shift of FDI inflow from sector to sector? *CORR is a determinant?*
- + Especially, to what extent the proportion of FDI in Agriculture/Manufacturing/Service sector; and total FDI inflow of host country change once the control of corruption level changes?

Literature review

Douglass North (1990):

- The development of a national wealth is not primarily due to its rich natural resources or diligence of large numbers of workers;
- ***It is mainly stimulated by the binding elements within management institutions;***
- Good institutions create a better economic environment likely to encourage innovation, boost production and sustainable growth.

Corruption: “*the abuse of entrusted power for private gain*” (Transparency International).

→ as one aspect of the institution that affects the investment climate and attracts FDI inflow.

Negative impacts of corruption on FDI flows:

Mauro (1995), (Tanzi and Davoodi, 1997), (Bardhan, 1997), Wei (2000a: 1), (Wei, 2000b), Patrick Tingvall, Gustavsson (2010), etc.

Some papers failed to find the evidence of corruption and FDI relation: (Abeb and Davoodi, 2000; Akçay, 2001), Al-Sadig (2009) .

Only a few studies focus on the influence of factors on attracting FDI in the countries in Southeast Asia: Normaz (2009), and Tajul and Hussin (2010).

Data

- + We employ the database from ASEAN Statistics.
- + The established dataset of FDI inflow for ASEAN countries from 1996 to 2011, including **9 ASEAN countries**: excepting Myanmar and East Timor due to data limitation.
- + The data of FDI by economic sector: *Agriculture; Manufacturing; and Service.*
 - ⇒ To be applied for the period of 1999-2005.

Methodology



- + New dependent variable - FDI inflow by economic sector - will provides a new deep insight of the relationship between corruption and the restructure of FDI by sector from source countries to ASEAN countries.
- + Two relationships (*FDI inflow and corruption; and FDI by economic sector and corruption*) were estimated through 3 equations:
 - OLS model: $\ln(Y)_{it} = \beta_0 + \beta_1 \text{Control of Corruption}_{it} + \beta_S X_{i,t-1} + u_{i,t}$ (1)
 - Specification model with FE and macro-indicators as control variables:

$$\ln(Y)_{it} = \beta_0 + \beta_1 \text{Control of Corruption}_{it} + \beta_S X_{i,t-1} + \gamma D_i + \delta T_t + u_{i,t} \quad (2)$$

- INST is added into FE model to clarify the effectiveness of the institution and control of corruption:

$$\ln(Y)_{it} = \beta_0 + \beta_1 \text{Control of Corruption}_{it} + \beta_2 \text{INST}_{it} + \beta_S X_{i,t-1} + \gamma D_i + \delta T_t + u_{i,t} \quad (3)$$



Methodology (cont.)



+ Two dependent variables used in all 3 models:

$$\frac{FDI_{inflow}}{TotalPopulation}; \quad \text{and} \quad \frac{FDI_{bysector}}{FDI_{inflow}}$$

No.	Abbreviation	Description	Control for	Expected sign
1	GDPPC	GDP per Capita	Market size	(+)
2	GDPG	GDP growth	Market size	(+)
3	POPG	Population growth	Market potential	(+)
4	SCHOOL	Secondary school enrolment	Quality of human capital	(+)
5	INFL	Inflation	Economic stability	(-)
6	AGGLO	FDI stocks as a percentage of GDP in the host country	Agglomeration effect	(+)
7	INST	The government effectiveness	Effectiveness of Institution	(+)
8	LAW	Rule of law	Quality of institution	(+)
9	POSTA	Political Stability, No Violence	Political Stability	(+)
10	OPEN	Openness	Freedom of trade and service	(+)

Empirical Results:

Dependent variable: $\ln\left(\frac{FDI_{inflow}}{TotalPopulation}\right)$

Output Table 1: The relationship between corruption and FDI inflows into ASEAN countries from 1996 to 2011

	(1)	(2)	(3)	(4)
VARIABLES	OLS	FE	FE	FE
Control of Corruption	0.013** (0.006)	0.015 (0.010)	0.006 (0.011)	-0.007 (0.012)
Log(GDP per Capita)	0.711*** (0.120)	1.969*** (0.273)	1.838*** (0.269)	1.754*** (0.253)
GDP growth	0.014 (0.026)	0.019 (0.024)	0.008 (0.024)	0.002 (0.023)
Population Growth	0.036 (0.177)	0.975** (0.383)	0.789** (0.376)	1.004** (0.409)
Secondary school enrolment	-0.004 (0.006)	-0.025 (0.018)	-0.035** (0.018)	-0.029* (0.017)
Inflation	-0.169 (0.894)	0.754 (0.863)	0.225 (0.857)	0.106 (0.824)
Agglomeration	2.510*** (0.399)	2.026*** (0.762)	2.455*** (0.753)	2.454*** (0.735)
Institution			0.052** (0.020)	0.034* (0.020)
Openness				0.011** (0.004)
Political Risk				-0.008 (0.008)
Rule of Law				0.050*** (0.019)
Constant	-2.614*** (0.820)	-12.174*** (1.977)	-12.491*** (1.910)	-14.151*** (1.894)
Observations	89	89	89	89
R-squared	0.833	0.516	0.556	0.628
Number of Categories		8	8	8
Standard errors in parentheses		*** p<0.01, ** p<0.05, * p<0.1		

- Corruption has a positive effect on the attraction of FDI inflow; but OLS model might be biased by omitted variables;
- The sign and magnitude of corruption coefficient has revised when institutional variables were added (Al-Sadig, 2009);
--> The quality of institution are the determinants of FDI inflow into ASEAN.
- The secondary school enrolment: the decision making of foreign investors into ASEAN due to cheap labor instead of hu-cap.
- The major role of macroeconomic indicators in FDI attraction is undeniable (*GDP- market size; PopGrowth- market potential*);
- The models for this dependent variable failed to find the positive effect of corruption on FDI inflow;
- Why the models with FDI inflow failed to find the positive effect of corruption on FDI inflow?

Empirical Results (cont.):

Dependent variable: $\ln\left(\frac{FDI_{sector}}{FDI_{inflow}}\right)$

Output Table 2: The relationship between corruption and FDI attraction by economic sector in ASEAN countries

	(1.1)	(1.2)	(1.3)	(2.1)	(2.2)	(2.3)	(3.1)	(3.2)	(3.3)	(4.1)	(4.2)	(4.3)
VARIABLES	Agri	Manu	Serv	Agri	Manu	Serv	Agri	Manu	Serv	Agri	Manu	Serv
Control of corruption	-0.01 (0.05)	0.02 (0.01)	-0.04 (0.03)	-0.18** (0.07)	0.05* (0.03)	-0.06 (0.10)	-0.18** (0.07)	0.05* (0.03)	-0.06 (0.11)	-0.13 (0.09)	0.06** (0.03)	-0.06 (0.14)
Log(GDP per capita)	-0.79 (0.85)	-0.21 (0.24)	-0.23 (0.59)	-4.28 (4.37)	-0.81 (1.47)	-9.95* (4.71)	-4.47 (4.43)	-0.98 (1.48)	-9.85* (4.91)	-5.10 (5.83)	-2.03 (1.66)	-9.26 (6.66)
GDP growth	0.11 (0.26)	-0.04 (0.08)	0.10 (0.19)	0.20 (0.25)	-0.21** (0.09)	-0.01 (0.35)	0.26 (0.26)	-0.20** (0.09)	-0.04 (0.40)	0.11 (0.34)	-0.25** (0.09)	-0.02 (0.48)
Population growth	0.42 (1.84)	-0.93** (0.41)	0.21 (1.12)	7.17 (4.03)	1.59 (1.15)	3.63 (4.13)	7.75* (4.13)	1.58 (1.15)	3.72 (4.31)	10.95* (5.46)	1.14 (1.15)	3.75 (6.71)
Secondary School Enrollment	-0.02 (0.04)	-0.02** (0.01)	0.04 (0.03)	-0.07 (0.24)	0.17** (0.07)	0.42 (0.24)	-0.08 (0.24)	0.17** (0.07)	0.42 (0.25)	-0.02 (0.28)	0.19** (0.07)	0.41 (0.31)
Inflation	2.59 (10.52)	1.20 (3.12)	-9.63 (7.45)	5.83 (8.91)	-2.75 (3.75)	-5.24 (13.48)	8.27 (9.45)	-1.49 (3.95)	-5.96 (14.60)	5.21 (10.83)	-0.30 (3.86)	-6.57 (17.88)
Agglomeration	-0.42 (2.45)	-1.15* (0.61)	-4.05** (1.73)	-4.70 (4.19)	-0.79 (0.95)	-6.81* (3.23)	-5.59 (4.36)	-1.23 (1.05)	-6.55* (3.69)	-2.56 (5.86)	-1.72 (1.24)	-6.15 (5.83)
Institution							-0.09 (0.10)	-0.03 (0.03)	0.02 (0.13)	0.05 (0.20)	-0.06 (0.05)	0.04 (0.26)
Political Stability										0.06 (0.07)	0.02 (0.02)	-0.00 (0.09)
Rule of Law										-0.25 (0.25)	0.02 (0.05)	-0.01 (0.33)
Openness										0.04 (0.07)	0.02 (0.02)	-0.01 (0.08)
Constant	1.73 (6.63)	3.20* (1.86)	-0.87 (4.88)	25.69 (20.32)	-9.45 (8.18)	42.17 (26.39)	30.30 (21.25)	-6.28 (8.76)	39.82 (30.66)	19.96 (29.36)	-1.82 (9.40)	36.66 (41.04)
Observations	26	35	29	26	35	29	26	35	29	26	35	29
R-squared	0.56	0.58	0.57	0.68	0.50	0.41	0.71	0.53	0.41	0.75	0.64	0.41
Number of category				8	8	8	8	8	8	8	8	8

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Some main findings



- + First, with the OLS model for total FDI inflows of ASEAN countries from 1996 to 2011, the results are similar to the prominent argument of existing literature that the corruption level negatively impacts on the attraction of FDI inflow.
- + However, this negative relationship conversely changes its sign once the quality of host country's institution is used as a control variable in fixed effect model;
- + *Instead of thinking that control of corruption deters FDI inflow, it is recommended that the result is an indication to point out the importance of the effectiveness of institutions in ASEAN.*
- + A new interesting result from this study: *cheap labor is one of the determinants of FDI attraction in ASEAN countries instead of high quality of human capital as expected.*

Some main findings (cont.)



- + *For the FDI into ASEAN by economic sector:*
 - + *Along with eco-growth and cheap labor, the control of corruption is a determinant of FDI attraction in manufacturing sector;* its role is weakened in Agricultural and Service sectors.
 - + *The Pop-Growth or market potential* is the determinant of FDI attraction in Agricultural sector.
 - + The different impacts of corruption on FDI attraction by economic sector are important reasons leading to an unclear negative relationship between CORR and FDI inflow into ASEAN.
- + *Limitation of the research:*
 - + Negative observations were automatically dropped from the model by using logarithm method => This excluding may bias our results;
 - + The sample size is limited; besides, this model has a limited set of control variables (one prescription is unable to cure for all diseases; hence, using one set of control variables for all economic sectors in this study might bias the results).
 - *We expect that have the updated database to retest all key findings and to improve the research.*

Thank your listening!