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**Article**

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# Institutions and Investment in the South and East Asia and Pacific Region: Evidence from Meta-Analysis

*Sridevi Yerrabati and Denise Donna Hawkes*

**Abstract**
The ability of any country to attract inward FDI is considered to depend on the quality of the economic governance found within that state. This study seeks to explore the value of quality economic governance in attracting FDI in South and East Asia by meta-synthesising 771 estimates from 48 empirical studies published between 1980 and 2012. The authors find evidence that countries with good quality regulation and low levels of corruption are able to attract more FDI. They also find that countries with stronger legal systems are rewarded with higher levels of inward FDI. The results of the meta-regression suggest that investing in quality economic governance is rewarded in the global economy through high levels of inward FDI.

*Please notice: data available upon request*

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**JEL** F2 F3 F4
**Keywords** FDI; governance; meta-regression analysis; systematic literature review; South and East Asia and Pacific countries

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# 1 Introduction

Given the important role inward FDI can play in accelerating economic growth and transformation, developing countries are interested in attracting it. Amongst many other benefits such as creating employment and increasing technological development, inward FDI provides a more stable source of external financing than sources such as private debt and portfolio flows (Gastanaga et al., 1998; Globerman and Shapiro 2002a; Gani 2007).

While South and East Asia and Pacific countries had long pursued the traditional strategy of self-reliance, FDI has become topical in the South and East Asia region since the late 1980s when most of the countries in the region adopted an open door policy to welcome FDI (for example, India in 1981 and China's open door policy in 1978) (Wang, 1995). This change is seen as a result of major political decisions and economic development strategy so as to uplift the economies from their economic backwardness and reach their long term goals of development.

In addition to opening doors for foreign investments, the need was felt for appropriate policies and for an institutional environment for economic growth. Most of the countries in this region have all, to varying degrees, made changes to their governance to make the investment environment conducive and to sustain foreign inflows and growth (Haggard, 2004; Lee, 2002). Needless to say, economic growth was needed to make any sustained and meaningful reduction in poverty, in reducing unemployment and improving living standards of people.

Empirically, the effect of economic governance on FDI is widely debated in the case of South and East Asia and Pacific countries, leaving a scope for aggregating these studies to explore the genuine and the overall impact of governance on both inward FDI and economic growth. Motivated by the above reason, the aim of this study is to contribute to evidence based policy making and to academic research on the governance FDI relationship by providing a meta synthesis of empirical evidence on various measures of governance and FDI, identifying factors causing heterogeneity in the results, pointing to policy implications of our results and identifying potential avenues for future research within this field of study. In order to achieve the research aim, we raise the following questions: Is there a genuine effect of measures of governance on inward FDI? What is the directionality of such effect? We answer these questions

by using all available empirical evidence obtained using systematic literature review from 1980–2012 on effects of governance on inward FDI.

The definition of economic governance has evolved over the last few years. According to Kaufmann et al. (1999) Governance consists of the traditions and institutions by which authority in a country is exercised. This includes the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them. Good, transparent and efficient governance in host countries ensures the safety of investments and thus attracts foreigners to invest. While there are many international and local authorities which give both subjective and objective information on governance, literature in the field of governance and inward FDI has used four main sources. They are worldwide governance indicators provided by Kaufmann et al. (1996) under a World Bank project, Freedom House measure of voice and accountability and political rights, Polity dataset and International Country Risk Guide (ICRG).

These different data sets on the quality of governance raise the issue of divergence in various measures of governance measured by these institutions. In order to synthesise the effect of governance measures on growth, we delved deeper into the sub measures of each measure of governance to synthesise them based on the common sub measures. After observing the individual variables (representative sources) that have been used in measuring governance by these different data sources, we have classified governance into 7 measures based on World Wide governance measures. These seven measures are termed hereafter as voice and accountability, political stability, government effectiveness, regulation, law, corruption and aggregate governance.

The rest of the paper is organised as follows. Section 2 presents a systematic review of literature with Section 3 outlining the methodology used in the study. Section 4 presents results followed by concluding remarks in Section 5.

## 2 Literature review

While it is generally believed that good governance in a host country helps in attracting inward FDI, most of the empirical studies show that this is not the case.

A systematic literature review of these empirical papers is presented here with a view to unearthing the issues within the existing literature in terms of differences in their findings and the reasons causing such differences.

## 2.1 Theoretical views on governance and inward FDI

Two main theoretical frameworks have been used in explaining the relationship between economic governance and inward FDI. Firstly, Dunning's OLI framework (1980) explains the various reasons for which an MNC enters into a host country. According to Dunning (1980) an MNC will enter a host country when each of the ownership, location and organisation factors are met. In this context, economic governance can be seen as a location factor which might deter investments or serve as a helping hand for foreign investors depending on the form of investment and the industry into which these investments flow.

Secondly, North (1991) in his institutional theory posits that institutions in the form of political, economic and structural interactions are human-made constraints which aim to decrease the level of uncertainty and allow for firms and individuals to interact efficiently. While governance aims to facilitate investments, they effect transactions (ex: cost of protecting property rights) and transformation costs (ex: by effecting production interruptions) which in turn affect the profitability of such investments (Dahlstrom and Johnson, 2007). Both Dunning's and North's theories suggest that based on contextual factors, governance can have either positive or negative effects on FDI.

## 2.2 Empirical view on governance and inward FDI

Empirical studies on the measures of governance and inward FDI for the South and East Asia and Pacific region that have been identified in the search are: Gastanaga et al. (1998), Globerman and Shapiro (2002a), Globerman and Shapiro (2002b), Hsiao and Shen (2003), Anghel (2004), Globerman and Shapiro (2004), Gani (2007), Hur et al. (2007), Adeoye (2009), Brunetti and Weder (1998), Wernick et al. (2009), Ali et al. (2010), He et al. (2011), Muhammad et al. (2011), Jadhav (2012), Luca and Spatafora (2012), Habib and Zurawicki (2001), Wei (2000), Teksoz (2004), Voyer and Beamish (2004), Straub (2005), Dahlstrom and

Johnson (2007), Khamfula (2007), Brouthers et al.(2008), Cole et al.(2009), Sadig (2009), Woo and Heo (2009),Qian et al.(2012) and Mathur and Singh (2013), Nigh and Schollhammer (1987), Singh and Jun (1995), Busse and Hefeker (2005), Baek and Qian (2011), Zheng (2011) and Driffield et al. (2012), Seyoum (1996), Lee and Mansfield (1996), Ahn et al.(1998), Li and Resnick (2003), Nunnenkamp and Spatz (2004), Ahlquist (2008), Mayer (2006), Elo (2007), Yackee (2008), Zhang and Fu (2008), Akisik and Pfeiffer (2009), Rai (2009), Azemar and Desbordes (2010), Binici (2010), Goodspeed et al. (2010), Arbatli (2011), Davis (2011) and Gordon et al. (2012), Cyrus et al. (2006), Fan et al. (2009), Arbatli (2011), Busse et al. (2011), Wang et al. (2011), Harms and Ursprung (2002), Addision and Heshmati (2003), Jensen (2003), Li and Resnick (2003), Jensen and McGillivray (2005), Busse (2004), Blanton and Blanton (2007), Choi (2008), Guerin and Manzocchi (2009), Doces (2010). All these studies are grouped based on the measure of governance namely, voice and accountability, political stability, government effectiveness, regulation, law, corruption and aggregate governance.

Voice and accountability capture the extent to which citizens in a country have freedom of expression, freedom of association and media and have a voice in the government (Wernick and Haar, 2009). Voice and accountability can affect FDI by inclusion or exclusion of public opinion on investments which can in turn allow or deter foreign investments (Gani, 2007). Studies by Globerman and Shapiro (2002a), Jadhav (2012), Woo and Heo (2009), Busse and Hefeker (2005), Zheng (2011), Li and Resnick (2003), Davis (2011), Gordon et al. (2012), Harms and Ursprung (2002), Jensen (2003), Jensen and McGillivray (2005), Busse (2004), Blanton and Blanton (2007), Choi (2008), Guerin and Manzocchi (2009) and Doces (2010) have reached mixed conclusions on the role of voice and accountability on inward FDI.

On the one hand, results reported by Globerman and Shapiro (2002a), Busse and Hefeker (2005), Zheng (2011), Harms and Ursprung (2002), Jensen (2003), Jensen and McGillivray (2005), Busse (2004), Blanton and Blanton (2007), Choi (2008) and Doces (2010) show that voice and accountability have a positive and significant effect on FDI. On the other hand Jadhav (2012) and Guerin and Manzocchi (2009) show that voice and accountability have a negative and significant effect on FDI. Others like Woo and Heo (2009), Li and Resnick (2003) and Gordon et al. (2012) report mixed results.

Political stability measures the solidity of government to political shocks, terrorism and domestic violence which can eventually reduce the risk of doing business and deter investments. Presumably foreign investors would like to invest in countries with political stability to ensure the continuity of policies by government. Studies focusing on this measure of governance are Globerman and Shapiro (2002a), Anghel (2004), Jadhav (2012), Singh and Jun (1995), Busse and Hefeker (2005), Baek and Qian (2011), Gordon et al.(2012), Busse et al.(2011) have generated mixed results. While Anghel (2004), Baek and Qian (2011) and Busse et al. (2011) found a positive and significant effect, the negative and insignificant effect is shown by Jadhav (2012).

Government effectiveness measures the quality of public services and the insulation of those services from political pressure. Through government effectiveness, government can exert discretionary power on economic activities by designing and implementing economic policies which can either deter or encourage investments (Globerman and Shapiro 2002a, Anghel, 2004). Studies by Gastanaga et al. (1998), Arbatli (2011), Gordon et al. (2012) and Jensen (2003) show mixed effects of government effectiveness on FDI under different models.

Regulation as one of the elements of governance indicators is the wide and diverse measure as it includes regulation related to aspects such as intellectual property rights, environment regulations, restrictive capital controls, accounting standards and corporate governance and tax and tariffs. Regulation captures the ability of a government in generating these policies and using them to promote private sector development. Through these policies, regulation can affect FDI as they can either speed up or delay the investments alongside affecting the cost of investments. There have been only three studies that have looked at the impact of Globerman and Shapiro (2002a), Jadhav (2012), Gordon et al. (2012) which reported positive and significant, positive and insignificant and mixed effect respectively leaving a scope for both further research and conclusive results.

The law can affect investments through various legal institutions and property rights protection. This measure also includes the quality of contract enforcement, the police, the courts and the likelihood of crime. In a country where there are weak legal institutions and property rights protection, very few foreign investors would like to invest as it would put their investments at risk and vice versa. The positive and significant effect is shown by Anghel (2004), Gani (2007), Jadhav (2012) and Fan et al. (2009). While Globerman and Shapiro (2002a) have shown

the positive and insignificant effect of the rule of law, Arbatli (2011) has shown a negative and insignificant effect. Studies by Busse and Hefeker (2005) and Gordon et al. (2012) have reported mixed effects.

Corruption is viewed as one of the important measures of governance as it has an important bearing on investments. Corruption measures the extent to which public goods are misused or used for private purposes by individuals. However, corruption cannot be considered in isolation from other governance related factors as bad governance is closely associated with corruption. Studies by Gastanaga et al. (1998), Globerman and Shapiro (2002a), Hsiao and Shen (2003), Anghel (2004), Gani (2007), Jadhav (2012), Habib and Zurawicki (2001), Wei (2000), Teksoz (2004), Voyer and Beamish (2004), Straub (2005), Dahlstrom and Johnson (2007), Khamfula (2007), Sadig (2009), Mathur and Singh (2013), Woo and Heo (2009), Goodspeed et al. (2010), Gordon et al. (2012) and Jensen (2003) have focused on the effect of corruption on inward FDI.

Corruption is considered to affect foreign investments in two ways – increase in cost of investments leading to decrease in profitability of such investments and increase in uncertainty levels in the host country. Some studies have also shown that corruption 'greases the wheels' of investments rather than 'sands the wheels of investment' (Globerman and Shapiro (2002a), Gastanaga et al. (1998), Hsiao and Shen (2003) and Teksoz (2004)).

Finally, Globerman and Shapiro (2002b), Globerman and Shapiro (2004), Hur et al. (2007), Adeoye (2009), Wernick, Haar and Singh (2009), Ali et al.,(2010), Muhammad et al. (2011), Luca and Spatafora (2012), Ahlquist (2008), Goodspeed et al. (2010), Gordon et al. (2012) have focused on the effect of aggregate governance on inward FDI. Overall governance includes various political, legal and institutional factors in a country that can have a bearing on investments. While governance is expected to show a positive effect on foreign investments by providing impartial, effective and efficient conditions to operate, there is no conclusive evidence on this.

Mixed results and seemingly contradictory arguments on the empirical relationship between measures of governance and inward FDI can be attributed to various measurements, conceptual and methodological differences in these studies (Appendix 5). Given this situation, policy makers may be uncertain as to what kind of policy they should propose in order to create a favourable investment climate for foreign investors in terms of economic governance.

In order to address the above inconclusiveness, as outlined in the introduction section this study has the following research aims; firstly, to deal with the effect of measures of governance on inward FDI and secondly with respect to heterogeneity. With regards to the effect, the following two questions are raised: firstly, is there any genuine effect of each measure of governance (voice and accountability, political stability, government effectiveness, regulation, corruption and rule of law) on the inward FDI into South and East Asia and Pacific countries? Secondly, what is the directionality of such effect? With respect to differences in reported results the following questions will be answered. Why do governance and FDI studies report such divergent results? Is the heterogeneity due to the data generating process or is it due to differences in research design? An overall summary of this study is given in Appendix 6.

## 2.3 Methodology

The review methodology used in this thesis, i.e the methods used for searching studies, study selection, critical evaluation and data extraction is informed by three sources. First, Cambell and Cochrane Collaboration guidelines for systematic reviews in health care and social policy; second, Centre for Reviews and Dissemination (CRD, 2009) of the University of York; third, Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) of the Institute of Education. Data analysis is informed by Doucouliagos et al. (2010), Doucouliagos and Ulubasoglu (2008) and Stanley and Doucouliagos (2012). Reporting guidelines are informed by Stanley et al. (2013).

We started by establishing a pre-established search criteria to identify all studies in the English language on measures of the dependent variable (FDI) and independent variable (governance). This is done in two stages: the first stage involves identifying databases for published and unpublished studies. The second stage involves specifying key words, searching databases and storing results.

For published studies, databases such as EBSCO host (Business and economics database), web of knowledge (social sciences), International Bibliography of the social sciences (Economics, politics, sociology, anthropology and Economics), Science direct (science and humanities), Swetswise and JSTOR (social sciences) were used. For unpublished studies, databases such as World Bank e-library, Harvard Kennedy e-library, Asian Development Bank e-library,

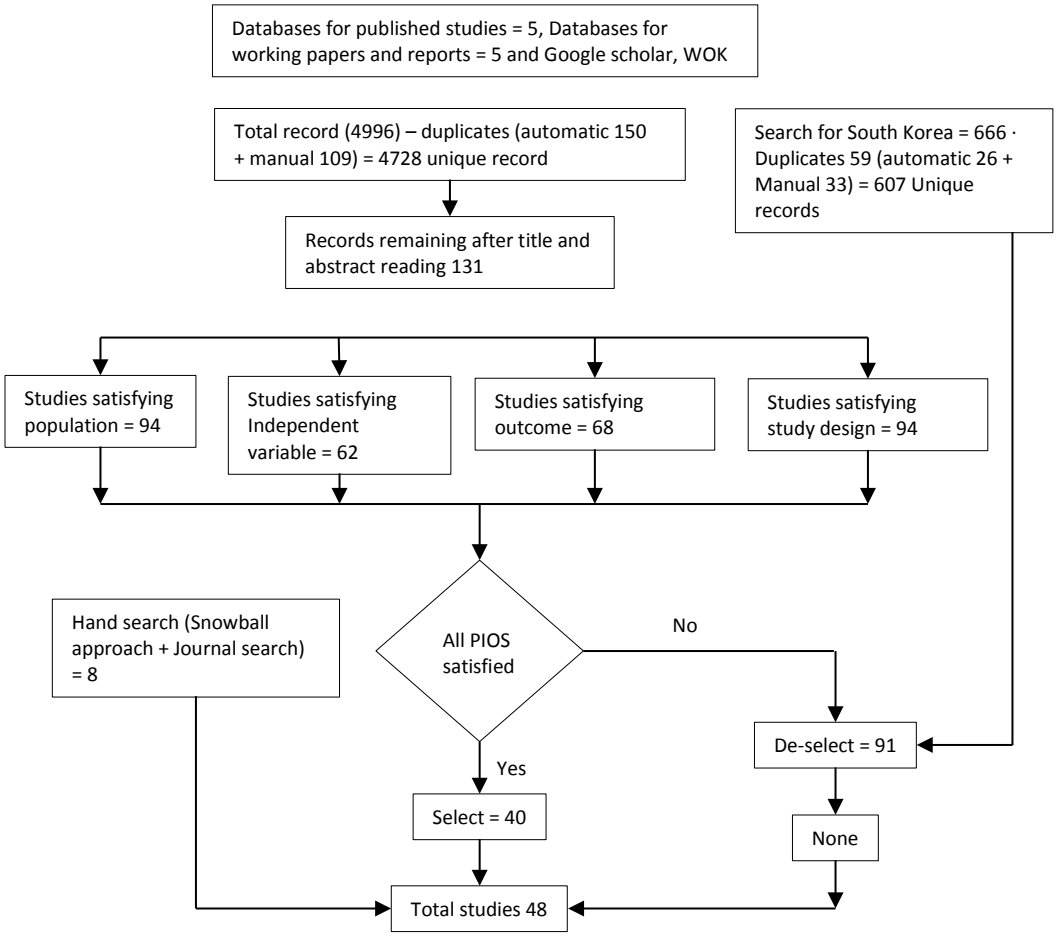
National Bureau of economic research and IMF e-library were used. In addition to these databases, two search engines, namely Google scholar and web of knowledge provided by University of Greenwich were utilised. In addition to the above, manual search was performed in order to identify grey literature using two approaches – snowball approach and random search of studies in 5 journals. Under the snowball approach we have started with the reference list of studies identified through systematic review and proceeded to find new studies. These exhaustive searches were carried out to identify all possible studies on measures of governance and inward FDI.

With a pre-defined list of key words for measures of governance and inward FDI (Appendix 1), 'title', 'abstract', 'text' and 'keyword' was searched in the above databases. The time period of the study was January 1980 – December 2012. A total number of 4996 studies were retrieved which have analysed the relationship between measures of governance and inward FDI. From this, 150 and 109 duplicate studies were removed using automatic and manual duplicate searches respectively. This left a total of 4728 unique studies for further screening. Figure 1 summarises the methodology used in this study.

The relevance of each study was checked based on whether the study estimates or analyses the relationship between measures of governance and inward FDI? While the earlier study is coded as 'E', later ones are coded are 'T'. If a study estimates and analyses the relationship, then it is coded as 'TE'. Studies which do not satisfy any of these criteria are not included in meta-analysis. 131 studies were selected from the initial screening stage and these were considered for the critical evaluation stage. This was done using PIOS (Population-Independent variable-Outcome variable-Study design) criteria (Appendix 2). While 94, 62, 68 and 94 studies have satisfied population, independent variable, outcome variable and study design respectively, only 40 studies have satisfied all four criteria (Appendix 3). Another 8 studies were added to this number by hand searching, making a total of 48 studies for meta-analysis. Our exclusive search for studies on South Korea did not result in any records.

The following data were obtained from 48 studies. Firstly, bibliographical information such as name of the first author and the University, year of publication of study and type of study (whether it is a published or unpublished study). Secondly, study characteristics such as a kind of data used, information on

*Figure* 1: Summary of methodology used in the study




dependent and independent variables such as their functional form and their data sources, and estimation methods. Thirdly, outcome related information such as estimated parameters, t-values, standard errors, P-value, Z-value, F-value for linear, non linear and squared terms was obtained.

The general form of econometric model used in the primary empirical studies with linear terms only (Equation 1) and that with linear, nonlinear and squared terms (Equation 2) is shown below:

$$Y_{it} = \alpha_0 + \alpha_1 X_{it} + \gamma F_{it} + \varepsilon_{it} \quad (1)$$

$$Y_{it} = \alpha_0 + \alpha_1 X_{it} + \alpha_2 X_{it} \cdot K_{it} + \alpha_3 X^2_{it} + \gamma F_{it} + \varepsilon_{it} \quad (2)$$

In above equations,

$Y$ – Inward FDI
$X$ – Measures of governance,
$F$ – Vector of other variables
$i$ – Country indices
$t$ – Time indices
$\alpha_0$ – Constant term
$\alpha_1$ – Marginal effect of governance on Y
$X \cdot K$ – Interaction term of measures of governance with K
$X^2$ – Non-linear term of measures of governance
$\alpha_2$ – Measures the effect of X.K on inward FDI conditional on the value of K
$\alpha_3$ – Measures the effect of $X^2$ on Y conditional on its own value
$\varepsilon$ – Random error term

The effect size is measured using partial correlation to allow for meaningful comparison across different models. Various estimates of $\alpha_1$ are converted into partial correlations using the formula $r = [t/\sqrt{(t^2 + dof)}$. Where, t stands for t-statistics of the multiple regression coefficient, dof stands for the degrees of freedom of the respective t-statistics.

## 2.4 Modelling simple and meta-regression analysis

The following equation is used for simple meta-regression analysis for estimating the overall effect after correcting for publication bias:[1]

$$r_{ij} = \beta_0 + \beta_1 SE^2_{ij} + \varepsilon_{ij} \text{ equation} \quad (3)$$

[1] Publication bias is tested using Funnel Asymmetric Test (FAT) and Precision Effect Test (PET). FAT-PET is estimated using equation $t_i = \beta 1 + \beta 0\ (1/SE_i) + v_i$ (where FAT is $H_0$: $\beta 1 = 0$ and PET is $H_0$: $\beta 0 = 0$). These aspects are explored in a different study.

The following equation is used for multiple meta-regression analysis for estimating the overall effect after correcting for publication bias:

$$r_{ij} = \beta_0 + \beta_1 SE^2_{ij} + + \beta_2 X_{ij} + \varepsilon_{ij} \text{ equation} \quad (4)$$

The following equation is used for multiple meta-regression analysis with study and journal specific moderator variables:

$$r_{ij} = \beta_0 + \beta_1 SE^2_{ij} + \beta_2 X_{ij} + \beta_3 Z_j + \varepsilon_{ij} \quad (5)$$

i = Estimate
j = Journal
r = Partial correlation coefficient
SE = Standard error
$SE^2$= Squared standard error
$\beta_0$= Shows the effect of independent variable on dependent after correcting for publication bias
$\beta_1$= coefficient of $SE^2$
$\beta_2$= Coefficient of other factors such as real world
$\beta_3$= Coefficient of study and author related factors
$\varepsilon_i$ = Error term
X = Estimate specific covariates
Z = Journal specific covariates

It is worth highlighting at this point that while some studies have defined r on a scale of 0–1 from low to high governance, others have used it as 0–1 high to low governance. In order to aggregate estimates, we have rescaled all estimates as 0–1 low to high governance. This was done by inverting and multiplying both coefficients and standard errors of estimates defined on the opposite scale (i.e. 0–1 high – low governance) by –1.

## 2.5 Discussion of results

We present and analyse results of simple meta-regression analysis (SMRA) and multiple meta-regression analysis in this section. Before that, funnel plots and graphs of chronological order of estimates are presented. These graphs are used in

order to offer a clear picture of the state of empirical knowledge in governance FDI studies.

### 2.5.1 Funnel plots

*Figure* 2: Funnel Plots for measures of governance and FDI estimation[2]

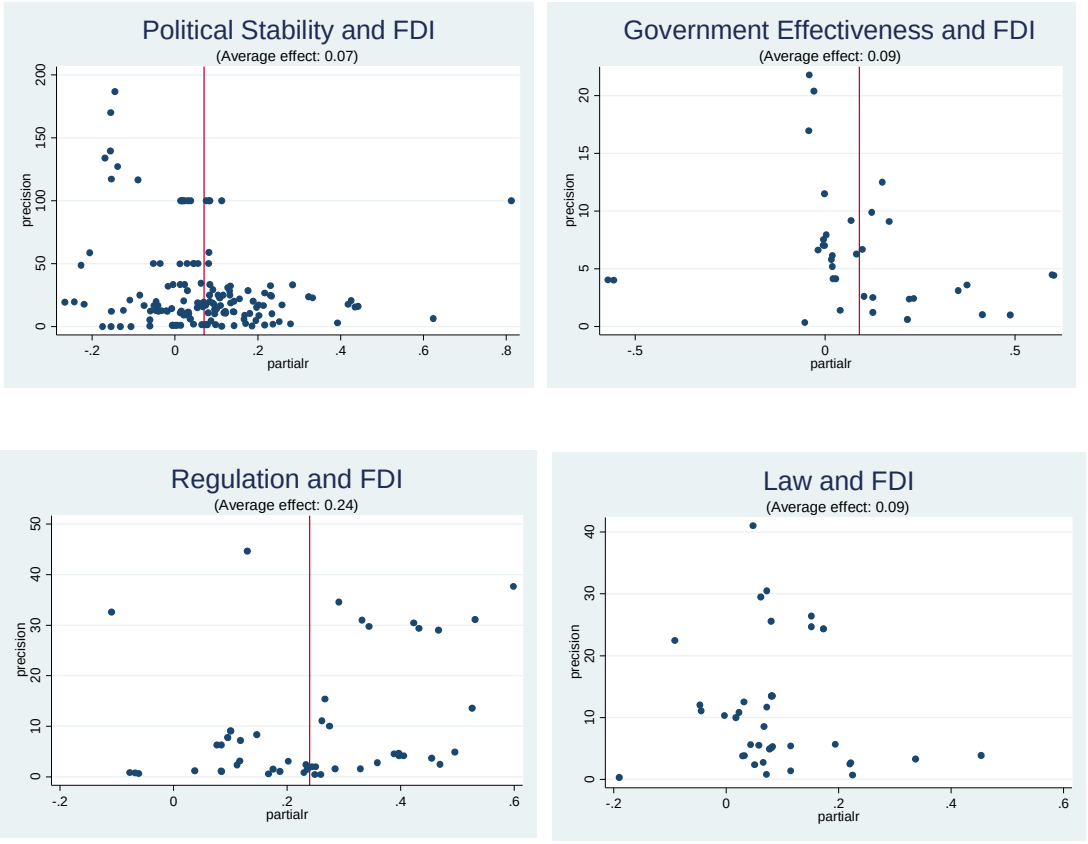



*Figure 2* continued

[2] We did not plot funnel graph for Voice and Accountability as the number of observations are fewer.

*Figure* 2 continued

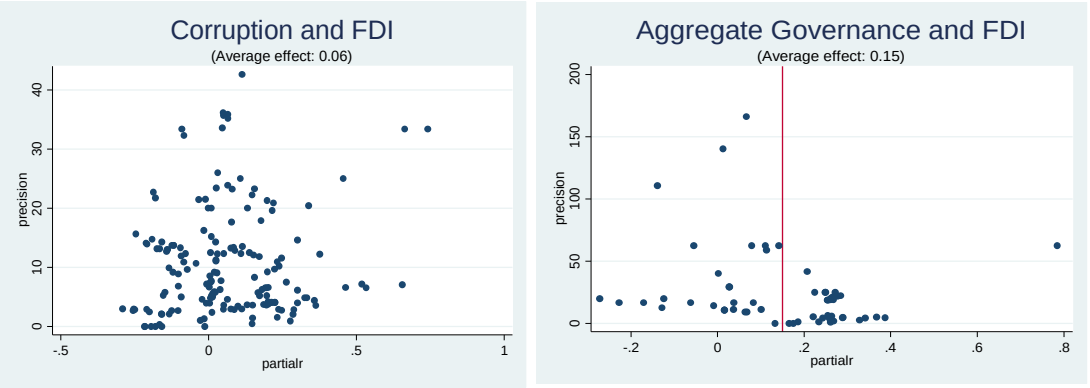
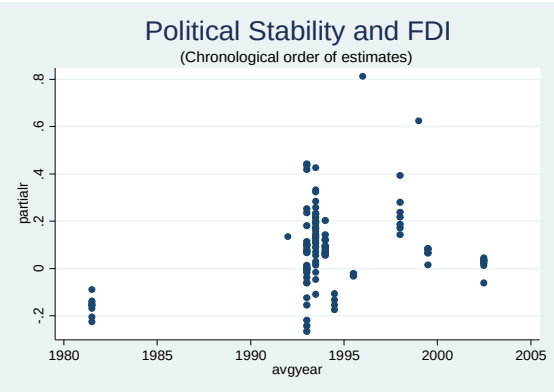


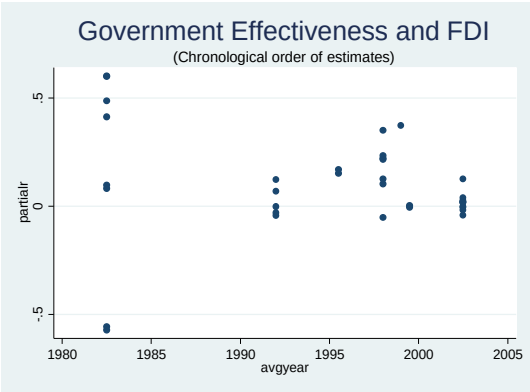

Figure 2 presents estimates of measures of governance and inward FDI are plotted on the funnel plot. Funnel plot is used to trace the relationship between the effect size which is measured using partial correlation (shown on the X axis) and its precision measured as the inverse of the standard error (shown on the Y axis). While high precision estimates are generally few and are compactly distributed at the top of the funnel, low precision estimates are at the bottom of the funnel and are widely distributed. One possible reason for the wide dispersion of estimates (which is the case in most of the graphs) is publication bias.[3] (Doucouliagos and Ulubasoglu, 2008). In each of the above graphs, the centre of the plot represents the estimated true underlying effect of the respective measure of growth. In contrast to graphs of political stability, the other graphs show wide dispersion of governance-inward FDI values around the central value.

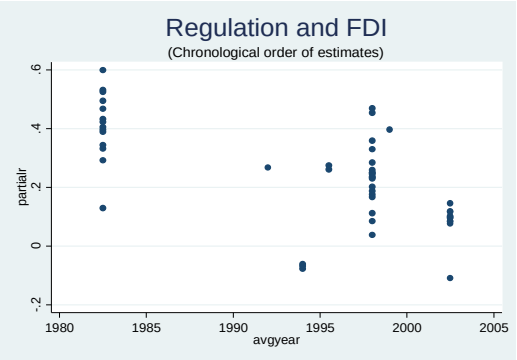
[3] We have tested for publication bias using Funnel Asymmetric Test (FAT) and Precision Effect Test (PET). Despite the presence of publication bias, PET results suggest that there is genuine effect of each measure of governance on FDI along with aggregate governance. However, they are not robust in case of corruption and aggregate governance.

### 2.5.2 Chronological order of estimates

*Figure* 3: Chronological order of measures of governance and FDI estimates[4]



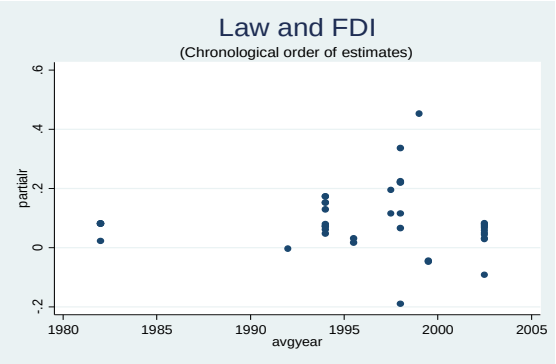




*Figure* 3 continued

[4] We did not plot chronological graph for Voice and Accountability as the number of observations are fewer.

*Figure* 3 continued

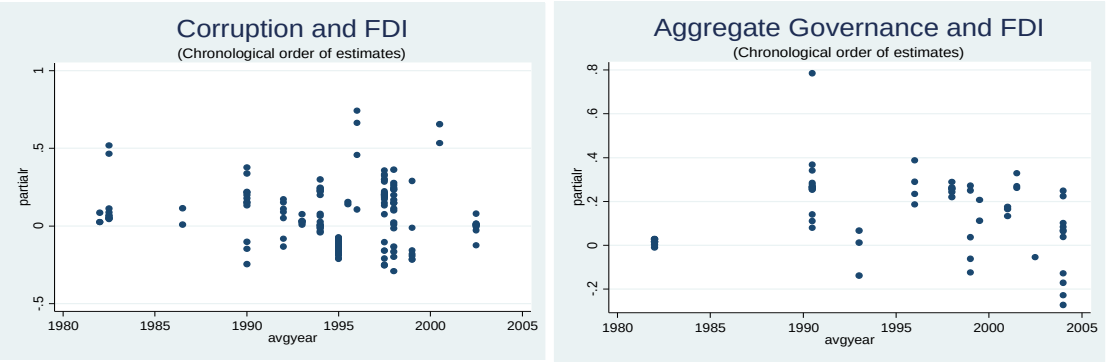



Figure 3 shows the chronological order of estimates of measures of governance on inward FDI. X-axis shows the end year of sample period and the Y axis shows partial correlation. Chronological ordering of graphs offers an insight into the evolution of effect sizes and highlights the trends. With the exception of voice and accountability and political stability graphs, we see a downward trend in the estimates[5]. The downward trend has an important economic interpretation as it indicates that governance over a period of time has a declining effect on inward FDI as opposed to the initial years of investment. As an alternative explanation, the downward trend can also be due to the fact that the econometric techniques have gotten better at controlling econometric problems and therefore smaller estimates are found.

### 2.5.3 Simple meta-regression analysis

Table 1 shows unweighted and weighted simple meta-regression results of individual measures of governance on inward FDI. As can be noted, all unweighted estimates are with positive sign, indicating that a higher measure of each measure leads to more FDI. For instance, tighter regulations are associated with more FDI. In the case of corruption, the results should be read inversely (due

[5] We see the same downward trend in these graphs taking end year of sample period instead of average year.

to rescaling) i.e. more corruption leads to less FDI. A positive effect of aggregate governance in the last column indicates that better governance is good for FDI.

Except for corruption, all the estimates are significant and unreliable as the $R^2$ value of each of these measures is very low ($R^2$ value ranges from 0.002 for aggregate governance to 0.33 for regulation). In addition to lower $R^2$ values, another shortcoming with this method of estimation is that the unweighted method treats all estimates equally with equal weight. Therefore, studies with a large number of estimates can have an undue influence on the statistical assessment. Therefore, these results can be biased and misleading. Hence, following Stanley and Doucouliagos (2012), we ran the above models using the weighted least squares method where estimates are weighed by precision. We calculate precision as the inverse of the standard error as it is proven to be the optimal way of calculating weights from a statistical point of view.

When estimates are weighted by precision it is noted that, the size and significance of all measures have changed. A change in the size and significance of estimates indicates that undue influence by estimates is possibly removed. In terms of the effect, the positive effect of regulation for instance, indicates that more regulation is good for FDI, whereas in the case of corruption, positive effect indicates that more corruption is still bad for FDI.

*Table* 1: Simple meta-regression analysis results

| | Political Stability (Col. 1) | Government effectiveness (Col. 2) | Regulation (Col. 3) | Law (Col. 4) | Corruption (Col. 5) | Aggregate governance (Col. 6) |
|---|---|---|---|---|---|---|
| Un weighted estimates, β0 (Row1) | 0.04<br>(2.53)<br>$R^2$=0.04 | 0.08<br>(1.67)<br>$R^2$=0.01 | 0.17<br>(6.78)<br>$R^2$=0.33 | 0.06<br>(2.94)<br>$R^2$=0.09 | 0.01<br>(0.35)<br>$R^2$=0.10 | 0.14<br>(3.45)<br>$R^2$=0.002 |
| Estimates weighted by precision, β0 (Row2) | 0.03<br>(1.68)<br>$R^2$=0.08 | 0.01<br>(0.49)<br>$R^2$=0.01 | 0.18<br>(5.34)<br>$R^2$=0.39 | 0.12<br>(13.32)<br>$R^2$=0.16 | 0.05<br>(2.66)<br>$R^2$=0.07 | 0.05<br>(1.82)<br>$R^2$=0.01 |
| Number of estimates | 154 | 36 | 51 | 42 | 166 | 62 |

Note: Values in parenthesis right below the estimate represent t-values. Each column represents models run with all estimates of that measure of governance. Despite of removing the effect of outliers, results for voice and accountability are infeasible.

### 2.5.4 Multiple regression analysis

It can be noted that in spite of weighting these estimates, $R^2$ values are still low, indicating that the above models are weak in explaining the effect of governance on FDI. Hence similar to unweighted results these results can be misleading. One possible reason for a low $R^2$ value is due to the possible presence of heterogeneity. The expected value of governance FDI estimates will often depend on many other factors such as study, author and journal related. As these factors are unaccounted for, it is possible that both simple unweighted and weighted measures may capture the real effects of governance on FDI. Hence, we include the following moderator variables in order to validate simple meta-regression results. While some of the variables are included out of intuition (author specific variables) others are included as they have proven to have a significant effect in earlier meta studies (Doucouliagos and Ulubasoglu, 2008).

In terms of study related aspects, we have classified all studies into those that are published in journals and others that are not published. Estimation techniques used have proven to have an important effect on reported estimates. We have classified studies into those using OLS, panel data, time series, instrument and other techniques. In terms of the kind of data used, studies are grouped into panel, time series and cross sectional data. Sources of governance and FDI show different effects. In the case of FDI, data sources are grouped as the World Bank, UNCTAD, IMF and others. Data sources on governance are classified into World Wide Governance indicators, ICRG, Polity, TI, PRS, Freedom House and others. To test the effect of real world factors, estimates are classified into different regions such as South Asia, East Asia, South East Asia and mixed countries. Dummies for China and South Korea are used to see if inclusion of these countries in the sample countries makes any difference in reported results.

Authors can differ in their values and beliefs which can influence the techniques they use and the results they report. In order to capture this effect, we have classified authors based on the university the first author is from as American, European, South and East Asian, and others. We believe journals from different disciplines can differ in reported results due to the rhetorical purposes, they aim to fulfil and the different audience they target. Hence, we have classified journals in Economics and Finance, Business Management and Accounting, Policy and Development.

Results of weighted (row1) multiple regression analysis for each measure of governance is shown in Table 2. As we have several estimates taken from the same study, it can lead to the issue of potential dependence among estimates which causes bias in the reported results. This potential bias is removed by running MMRA using cluster analysis where each study is treated as a cluster. Results of cluster analysis are used to validate the results obtained by the weighted method.

Before we analyse the results, it is worth noting the following five points. First of all it is important to comment on the best overall fit of the models. With an adjusted $R^2$ value ranging from 0. 07 for government effectiveness to 0.94 for political stability, these models have done a reasonable job explaining the heterogeneity in governance FDI literature (Stanley and Docouliagos, 2012). As compared to $R^2$ values of simple meta-regression results, the explanatory power of these models has increased after inclusion of moderator variables. Hence, these estimates are more reliable as compared to simple meta-regression estimates.
Secondly, we could not test for endogeneity due to the limited number of estimates (in most cases it was less than 10). Therefore, the effects reported can be due to the possible presence of causality. Thirdly, in terms of the statistical significance, all estimates are statistically significant. In the fourth instance, robustness of all these results are confirmed by cluster analysis. In the fifth instance, with more than 140 estimates and an adjusted $R^2$ value of more than 0.88, my results are highly reliable for political stability and corruption. In the case of other measures, my results are slightly less reliable as either adjusted $R^2$ value is implausibly high or they have fewer numbers of estimates. In the sixth instance, all these results are retrieved after removing the effect of outliers.[6]

Firstly, in contrast to the results reported by Globerman and Shapiro (2002a), Zheng (2011), Li and Resnick (2003), Jensen (2003), Jensen and McGillivray (2005), Busse (2004), Blanton and Blanton (2007), Choi (2008) and Doces (2010) my results show that voice and accountability have a negative effect on inward FDI. Despite removing the effect of outliers, results for this measure of governance are remained negative and infeasible. Further research is needed, before any firm conclusions are reached. Nevertheless, the negative effect of voice and accountability indicates that low levels of this measure in these countries are

[6] Precision more than 200.

*Table 2*: Multiple Meta-Regression Results[7]

| **Political Stability** | | | **Government Effectiveness** | | | **Regulation** | | | **Law** | | | **Corruption** | | | **Aggregate Governance** | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ptype1 | 0.07 | 0.07 | Yearly | -0.78 | -0.78 | Yearly | -0.43 | -0.43 | Yearly | 0.21 | 0.21 | Yearly | -0.33 | -0.33 | Subject2 | -1.45 | -1.45 |
| | (2.86) | (8.48) | | (-2.2) | (-3.09) | | (-9.49) | (-14.88) | | (3) | (9.5) | | (-7.39) | (-6.98) | | (-7.29) | (-2.67) |
| Method1 | -0.05 | -0.05 | Lauthor2 | -1.31 | -1.31 | Method2 | 0.06 | 0.06 | Method1 | 0.15 | 0.15 | Data1 | 0.19 | 0.19 | Dumsk1 | 0.94 | 0.94 |
| | (-1.78) | (-4.51) | | (-2.05) | (-2.72) | | (1.78) | (0.6) | | (6.84) | (15.02) | | (11.78) | (43.94) | | (7.39) | (3.07) |
| Method2 | -0.12 | -0.12 | Subject1 | 0.60 | 0.6 | Lauthor2 | -0.29 | 0.29 | Method4 | 0.68 | 0.68 | Lauthor1 | 0.05 | 0.05 | Dsource2 | -0.44 | -0.44 |
| | (-4.03) | (-7.26) | | (1.82) | (2.6) | | (-1.94) | (-5.99) | | (7.86) | (35.84) | | (2.62) | (6.92) | | (-5.38) | (-1.7) |
| Lauthor1 | -0.21 | -0.21 | Dsource3 | -0.63 | -0.63 | Subject2 | -0.28 | -0.28 | Subject1 | 0.40 | 0.40 | Lauthor3 | 0.71 | 0.71 | Dsource4 | -0.42 | -0.42 |
| | (-7.46) | (-15.91) | | (-1.85) | (-2.48) | | (-7.96) | (-10.16) | | (7.84) | (29.34) | | (8.98) | (24.91) | | (-6.41) | (-3.52) |
| Subject3 | -0.12 | -0.12 | (β0) | 0.82 | 0.82 | (β0) | 0.63 | 0.63 | Subject3 | 0.22 | 0.22 | Dumchi1 | -0.81 | -0.81 | Idsource3 | -0.43 | -0.43 |
| | (0.03) | (0.03) | | (2.27) | (3.03) | | (13.16) | (15.18) | | (11.16) | (47.6) | | (-3.1) | (-24.6) | | (-4.01) | (-1.83) |
| Dsource1 | 0.75 | 0.75 | **N** | **34** | **34** | **N** | **51** | **51** | Dsource3 | -0.36 | -0.36 | Dumsk1 | 0.67 | 0.67 | Idsource6 | -0.43 | -0.43 |
| | (18.53) | (5.46) | | | | | | | | (-6.83) | (-30.76) | | (11.24) | (23.87) | | (-3.49) | (-1.8) |
| Idsource2 | -0.42 | -0.42 | **Adjusted** | **0.07** | **0.21** | **Adjusted** | **0.85** | **0.86** | (β0) | -0.29 | -0.29 | Flow1 | -0.12 | -0.12 | (β0) | 0.51 | 0.51 |
| | (-6.48) | (-43.66) | **R2/R2** | | | **R2/R2** | | | | (-3.69) | (-12.4) | | (-3.83) | (-11.43) | | (6.1) | (1.85) |
| (β0) | 0.26 | 0.26 | | | | | | | **N** | **42** | **42** | Dsource1 | -0.18 | -0.18 | **N** | **62** | **62** |
| | (8.87) | (15.18) | | | | | | | | | | | (-3.38) | (-5.93) | | | |
| **N** | **154** | **154** | | | | | | | **Adjusted** | **0.85** | **0.88** | Idsource5 | 0.21 | 0.21 | **Adjusted** | **0.63** | **0.67** |
| | | | | | | | | | **R2/R2** | | | | (3.22) | (6.76) | **R2/R2** | | |
| **Adjusted** | **0.95** | **0.95** | | | | | | | | | | Idsource7 | 0.75 | 0.75 | | | |
| **R2/R2** | | | | | | | | | | | | | (14.03) | (23.86) | | | |
| | | | | | | | | | | | | (β0) | 0.28 | 0.28 | | | |
| | | | | | | | | | | | | | (1.08) | (4.69) | | | |
| | | | | | | | | | | | | **N** | **166** | **166** | | | |
| | | | | | | | | | | | | **Adjusted** | **0.88** | **0.89** | | | |
| | | | | | | | | | | | | **R2/R2** | | | | | |

Note: Values in parenthesis right below the estimate represent t-values.

[7] Results of Precision Effect Test (PET) suggest that there is a genuine effect beyond publication bias in the case of each measure of governance along with aggregate governance. However, PET results are not robust in case of corruption and aggregate governance.

associated with high levels of FDI into them. These results reflect the tendency of MNC's to not to invest in countries where people are given a voice to express their views and interests on government policies and processes.

Secondly, the overall effect of political stability on inward FDI is found to be positive and significant, which are in line with the findings reported by Anghel (2004), Baek and Qian (2011) and Busse et al. (2011). Therefore, in general political stability does matter for foreign investors and it can be assumed that they like to invest in countries with high levels of stability. These results also suggest that foreign investors would not like to see frequent changes in the leadership and that they prefer long term government.

Thirdly, government effectiveness has a positive and significant effect on FDI. A positive effect of government effectiveness indicates that higher levels of government effectiveness are correlated with higher levels of FDI. This contrasts the view that foreign investors are not happy with the cumbersome rules and tight procedures that affect the process and productiveness of investments (Khamfula, 2007; Gastanaga et al., 1998 and Arbatli, 2011). However, it is worth noting that with the lowest number of observations and a lower $R^2$ value, results for this measure are not strong enough. The lack of government effectiveness data may have caused biggest challenge in this area of research. Hence, further research is advised in this field of study before any strong conclusions can be made.

In the fourth instance, while on the one hand, effective and efficient policies along with incentives can attract foreign investments (Globerman and Shapiro, 2002a), on the other hand burdensome regulations can negate such investments (Jadhav, 2012). MMRA results on regulatory quality suggest that tighter regulations or regulations enforced in friendly manner are preferred by foreign investors as it has a positive and statistically significant impact on FDI. Therefore, my results contrast the view that reducing the regulatory burden and making regulations easier for foreign investors would attract more FDI (Globerman and Shapiro, 2002b).

In the fifth instance, my results on rule of law contrast Arbatli (2011)'s view that a strong and impartial legal system is not preferred by foreign investors as the rule of law has a negative and statistically significant effect on inward FDI. As one would expect stronger laws to facilitate and protect investments, the negative effect of law contradicts this view (Anghel, 2004; Gani, 2007; Jadhav, 2012; Fan et al., 2009). This shows a need for host country governments to develop their

legal systems further and incline them in favour of foreign investors. Similar to the government effectiveness measure, despite a higher $R^2$ value, we have a limited number of observations for this measure and hence these results must be interpreted carefully.

In the sixth instance, a positive sign of corruption indicates that the higher the corruption, lower is inward FDI. This suggests that foreign investors view corruption as an extra cost of operation rather than viewing it as helping hand. My results are not in line with the literature arguing that corruption is good for foreign investors (Gastanaga et al., 1998; Globerman and Shapiro, 2002a; Teksoz, 2004; Voyer and Beamish, 2004; Khamfula, 2007; Mathur and Singh, 2013). Negative effects inform us that investors prefer not to invest in countries with high corruption or where there is a lack of anti-enforcement laws. Results in corruption confirm the view that corruption sands the wheels of investment rather than greasing them.

Lastly, with 65 observations, aggregate governance has a positive effect on inward FDI. From this result, it can be inferred that the higher the governance quality, the more attractive it is for foreign investors. While improved governance is important for the general wellbeing of the individuals, my results suggest that it also helps in attracting foreign investments. My results negate the view that, foreign investors are discouraged by extra cost and delays that are often associated with high levels of governance rather than seeing it as an advantage (Goodspeed et al., 2011). Nevertheless, $R^2$ value is only 0.67 suggesting that the model does not fully explain the effect of governance on FDI.

Based on the higher values of $R^2$ and with observations of more than 140, my results are strong enough for voice and accountability, political stability and corruption. Hence, we can safely suggest that the countries in South and East Asia and Pacific regions aiming to attract FDI must focus on these three measures of governance. In the case of the other four measures of governance, we see a need for further research to reach any conclusions.

Before we analyse the effect of moderating variables, it is important to note that, except for regulation models using a probit model all other results are robust including clustering on the regression. Using the general to specific model, insignificant factors were eliminated (Stanley and Doucouliagos, 2012). Twenty eight variables reflecting the characteristics of study, real world, author and journal have shown to have an important effect on reported estimates. For each of the

governance measures, only factors that have caused a noticeable impact on reported results are presented in the table and only interesting, unexpected or surprising results are discussed below.

In the case of study related factors, whether a particular study has been published or not in an academic journal matters as it is statistically significant and have reported higher effects in the case of political stability as compared to estimates from unpublished studies. For instance, published studies on an average have reported a value of 0.33 as opposed to an overall effect of 0.26. Except in case of law, estimates using yearly data on FDI show a negative effect with reference to those using non-yearly data. This could presumably be because governance takes time to show its impact on FDI. There is also evidence to suggest that estimation techniques matter for a governance FDI relationship. Models estimated using OLS and Probit techniques proved to be statistically significant compared to estimates estimated using other methods. Governance and FDI data sources also mattered.

Under real world factors, as expected, country composition of the sample did matter as there were few regionally specific effects. For instance, models including China in their list of sample countries have reported an average effect of –0.81 which is lower than those which did not include China. Similarly, inclusion of South Korea mattered as reported results are higher (i.e. 0.67) in case of corruption as opposed to an overall effect of 0.28. Thus we infer that governance FDI association did alter with the inclusion or exclusion of any particular region. These results are consistent with the notion that there can be many country specific factors that can have an important bearing on how governance works. It is interesting for future research to explore the reasons behind such differential impacts.

In the case of author related aspects, with the exception of political stability, law, corruption and aggregate governance, European authors seem to be consistently different in their results compared to other authors. For instance, reported results of government effectiveness and regulation are weak, i.e. –1.31 and –0.29 respectively by European authors than other authors i.e. 0.82 and 0.63 respectively. Such an emphasis on these factors shows that European authors view these factors to be less important than others. Probably because they see government effectiveness and regulation as a part of life, they lay less stress on these factors. Similarly, American authors have emphasised less on political

stability and more on the corruption. It is an interesting issue for future research to see why European and American experience is different in these aspects compared to other authors.

We also find that discipline specific journals are statistically significant. For instance, compared to studies from the Law, those from Economics and Finance discipline tend to place more emphasis on government effectiveness and law. Surprisingly, studies from Business Management and Accounting discipline under emphasise the importance of regulations and overall governance in attracting FDI. One possible reason for this could be that these disciplines view regulations to be less important in attracting FDI than in protecting such investments. Studies from Policy discipline view law to be more important for FDI. While these results suggest that the type of estimates reported differ across different types of journals, it is interesting to explore this matter further to understand if it is really discipline, that's causing the difference or if it is due to some other discipline related factors. The inclusion of other variables which are not reported in the table did not make any difference to reported results.

## 3 Conclusions

South and East Asia and Pacific countries have during the past decade or so begun liberalising their economic policies in order to create a favourable governance environment for FDI. However, whether or not such governance has helped these countries to attract FDI remains inconclusive. The aim of this study was to assess the role of measures of governance on inward FDI in order to reduce the inconclusiveness in this field. Using 771 estimates from 48 empirical studies conducted from 1980–2012, this study meta-synthesised the overall effect of each measure of governance on inward foreign direct investment. The study has also identified factors that have caused heterogeneity in the reported results.

The main message of this study is that each measure of governance has an important effect on FDI. In comparison to less regulated and high corrupt countries meta-regression results show that countries with high regulation and low levels of corruption are able to attract more FDI. Countries with stronger legal systems are positively related to inward FDI. As expected, aggregate governance is found to have a positive effect on inward FDI. It is important to note that with a

large number of observations and high $R^2$ values, my results are strong in the case of voice and accountability, political stability and corruption. These results also confirm the growing importance of the role played by governance on investments as suggested by North (1990) and Dunnings (1980).

This study has also shown that various study, real world, author and journal related aspects have caused significant difference to reported results in this field of study. An interesting finding that has emerged from this study is that American authors have been shown to be consistently different in reporting the effects of government effectiveness, political stability and aggregate governance. Journal discipline did make a difference to the reported results. As expected, regional effects such as inclusion of China and South Korea in the list of sample countries did matter. Hence the effect of all moderating variables must be taken on board, while interpreting these results.

Despite the useful findings, this study is subject to a number of caveats. The first and foremost caveat of this study is to do with the choice of sample countries and time period. This limitation would mean that the results are restricted to South and East Asia and Pacific countries and can only be generalised to those countries with similar governance and investment conditions. Secondly, in addition to showing direct effects, it is possible that governance affects FDI indirectly through its interaction with macro-economic factors among others. This study has only assessed the direct effects of measures of governance on inward FDI mainly due to the limited and diverse nature of both interaction[8] and non-linear terms[9]. This has been a common problem with several other meta-analysis studies and thus highlights the need for more extensive research in this field with interaction and non-linear terms.

Thirdly, the quality of results in this study is as good as the quality of studies included in meta-regression analysis. In the fourth instance, this study offers a general picture of the role of measures of governance on FDI. This limitation means that it does not look into the specific effects of sub measures of each measure of governance on FDI. Last but not least, it is important to note that governance can be measured in terms of the number of assassinations, riots and

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[8] There were about 15 different types of interaction terms ranging from a minimum of 1 to a maximum of 11 observations.

[9] There were only 2 different non-linear terms with less than 12 observations.

fines charged for violations of law and not just as a scale. However, we have only included studies which have defined governance as scale, and have excluded those that have defined it in terms of number. Whether or not the results of this study significantly differ if a wider definition of governance is considered is questionable.

The following directions for future research are suggested. Firstly, one important caveat of the empirical studies on measures of governance and inward FDI is that most of the studies have used the country as a unit of analysis. Presumably, the effect of governance in attracting inward FDI can differ regionally and is also based on the motive of FDI within one nation. Whether results on the effect of governance on inward FDI would significantly differ if it were possible to carry out research at the regional level or by sector is uncertain (Globerman and Shapiro, 2002b).

Secondly, most of the proxies used by existing studies in measuring economic governance in a country are subjective and perception based. The estimations reported by these studies are driven by subjective indices. In addition to this, the unanticipated negative effect of governance raises questions on whether these measures actually measure what has to be measured. This leaves an opportunity for future research to use more objective measures of governance by considering factual information on governance such as those provided by using the Business Database provided by the World Bank (2006). Another interesting direction for future research would be analysing the effects of economic governance on inward FDI separately by taking up country level studies. This would be informative for the dynamic effects of measures of governance on inward FDI and would also control for country level heterogeneity.

To conclude, based on the results of this study it can be safely suggested that without designing and implementing governance in an appropriate manner, attracting high levels of FDI might not be possible. Our results have important policy implications. Efforts towards raising the quality of institutions by designing and implementing policies that further political stability, regulation and overall governance is advised. Policy makers should design and enforce policies that let government be more accountable for its actions along with appropriate legal systems. All possible formal and informal mechanisms that aid in enhancing the quality of accountability of government and those that give more voice to its citizens might be helpful.

As government effectiveness has been shown to have a negative effect on FDI, from an FDI point of view, continuing tighter rules and thereby speeding up the process and productiveness of investments is advised. It is important that the quality of policy formulation and enforcement are in favour of foreign investors along with staying committed to stated policies. Policy makers can focus on improving the regulatory quality to increase their openness to foreign capital. Overall, South and East Asia pacific countries striving to attract FDI should continue to design and implement governance quality in a way that encourages and facilitates investments from foreign investors rather than constraining such investments.

# Appendix

## 1 Search key words used in governance and FDI meta-regression analysis

| |
|---|
| Governance – Worldwide governance indicators OR Governance OR Voice and Accountability OR Political Stability and Absence of Violence OR Government Effectiveness OR Regulatory Quality OR Rule of Law OR Control of Corruption |
| Inward Foreign direct investment – FDI or Foreign direct investment OR offshore investment OR cross border investment OR investment abroad OR overseas investment OR foreign assets OR Greenfield investment OR foreign investment OR foreign ventures OR foreign reinvestment OR foreign assets OR non-local investments OR international investment OR outside investment OR non-native investment OR remote investment OR non-domestic investment OR non-resident investment OR distant investment OR investment OR invest OR inflows OR direct investment OR investment in other countries |
| South and East Asia and Pacific countries – Emerging economies OR East Asian economies OR South East Asian economies OR East Asia OR South Asia OR South east Asia OR Afghanistan OR Bangladesh OR Bhutan OR India OR Maldives OR Nepal OR Pakistan OR Sri Lanka OR American Samoa OR Cambodia OR China OR Fiji OR Indonesia OR Kiribati OR Korea, Dem. Rep. OR Lao PDR OR Malaysia OR Marshall Islands OR Micronesia, Fed. Sts OR Mongolia OR Myanmar OR Palau OR Papua New Guinea OR Philippines OR Samoa OR Solomon Islands OR Thailand OR Timor-Leste OR Tuvalu OR Tonga OR Vanuatu OR Vietnam OR Asean OR Developing economies OR Developing countries |

## 2 PIOS framework

| |
|---|
| Population – The study should focus on South and East Asia Pacific economies or equivalent as specified in the search criteria. |
| Independent variable – The study should be examining the impact of measures economic governance in terms of a scale or its equivalent as specified in the search criteria. |
| Outcome variable – The study should be examining inward foreign direct investment or as defined in the search criteria. |
| Study design – Study design can be either theoretical or empirical. A study is considered to be theoretical if it is based on some theoretical model drawing, verbal or mathematical conclusions analysing impact of economic governance on economic growth. A study is considered to be empirical if it is based on regression model and draws an estimation model to estimate economic governance on economic growth. |

## 3 Number of studies satisfying PIOS criteria

| Criteria | Number of studies satisfying the criteria |
|---|---|
| Population (South and East Asia and Pacific countries) | 94 |
| Independent variable (Measures of governance) | 62 |
| Outcome variable (Inward foreign direct investments) | 68 |
| Study design c Empirical | 94 |
| Decision Select if all 4 criteria match – PIOS | |
| Select for the next stage | 40 |
| Deselect studies | 91 |

## 4 Descriptive statistics of moderator variables

| Moderator variable | Definition | Mean | Standard deviation |
|---|---|---|---|
| Ptype1 | =1 if the estimate is from an article published in the journal; = 0 otherwise | 0.544 | 0.50 |
| Ptype2 | =1 if the estimate is from unpublished study; = 0 otherwise | 0.456 | 0.50 |
| Specific fdi | =1 if the model uses FDI data on single country; = 0 otherwise | 0.020 | 0.14 |
| Non-specificfdi | =1 if the model uses FDI data on more than one country FDI; = 0 otherwise | 0.980 | 0.14 |
| Yearly | =1 if the model uses yearly data on FDI; = 0 otherwise | 0.526 | 0.50 |
| Non-yearly | =1 if the model uses non-yearly data on FDI; = 0 otherwise | 0.474 | 0.50 |
| Data1 | =1 if the model uses panel data; = 0 otherwise | 0.579 | 0.49 |
| Data2 | =1 if the model uses cross sectional data; = 0 otherwise | 0.421 | 0.49 |
| Fdi1 | =1 if the model uses levels of FDI; = 0 otherwise | 0.119 | 0.32 |
| Fdi2 | =1 if the model uses relative figures of FDI; = 0 otherwise | 0.092 | 0.29 |

*continued*

| Moderator variable | Definition | Mean | Standard deviation |
|---|---|---|---|
| Fdi3 | =1 if the model uses the natural logarithm of FDI; = 0 otherwise | 0.788 | 0.41 |
| Country1 | =1 if the estimate belongs to South Asia; = 0 otherwise | 0.007 | 0.08 |
| Country2 | =1 if the estimate belongs to Mixed countries; = 0 otherwise | 0.993 | 0.08 |
| Method1 | =1 if the model is estimated using OLS technique; = 0 otherwise | 0.417 | 0.49 |
| Method2 | =1 if the model is estimated using panel data technique; = 0 otherwise | 0.377 | 0.48 |
| Method3 | =1 if the model is estimated using instrumental variable technique; = 0 otherwise | 0.132 | 0.34 |
| Method4 | =1 if the model is estimated using the time series technique; = 0 otherwise | 0.073 | 0.26 |
| Method5 | =1 if the model is estimated using another technique; = 0 otherwise | 0.001 | 0.34 |
| Lauthor1 | =1 if the first author of the study is American; = 0 otherwise | 0.462 | 0.50 |
| Lauthor2 | =1 if the first author of the study is European; = 0 otherwise | 0.307 | 0.46 |
| Lauthor3 | =1 if the first author of the study is South and East Asian; = 0 otherwise | 0.047 | 0.21 |
| Lauthor4 | =1 if the first author of the study is from another region; = 0 otherwise | 0.184 | 0.39 |
| Subject1 | =1 if the estimate is taken from a study that belongs to Economics and Finance discipline; = 0 otherwise | 0.551 | 0.50 |
| Subject2 | =1 if the estimate is taken from a study that belongs to Business Management and Accounting discipline; = 0 otherwise | 0.161 | 0.37 |
| Subject3 | =1 if the estimate is taken from a study that belongs to Policy discipline; = 0 otherwise | 0.208 | 0.41 |
| Subject4 | =1 if the estimate is taken from a study that belongs to Development discipline; = 0 otherwise | 0.069 | 0.25 |
| Subject5 | =1 if the estimate is taken from a study that belongs to Law discipline; = 0 otherwise | 0.011 | 0.11 |

*continued*

| Moderator variable | Definition | Mean | Standard deviation |
|---|---|---|---|
| Dumchi1 | =1 if the model includes China in the sample countries; = 0 otherwise | 0.975 | 0.16 |
| Dumchi2 | =1 if the model excludes China from the sample countries; = 0 otherwise | 0.025 | 0.16 |
| Dumsk1 | =1 if the model includes South Korea in the sample countries; = 0 otherwise | 0.849 | 0.36 |
| Dumsk2 | =1 if the model excludes South Korea from the sample countries; = 0 otherwise | 0.151 | 0.36 |
| Form1 | =1 if the model uses merger and acquisition form of FDI; = 0 otherwise | 0.089 | 0.28 |
| Form2 | =1 if the model uses aggregate FDI; = 0 otherwise | 0.911 | 0.28 |
| Flow1 | =1 if the model uses stock of FDI; = 0 otherwise | 0.048 | 0.21 |
| Flow2 | =1 if the model uses the flow of FDI; = 0 otherwise | 0.952 | 0.21 |
| Indi1 | =1 if the model includes governance as the main independent variable; = 0 otherwise | 0.964 | 0.19 |
| Indi2 | =1 if the model includes governance as a control variable; = 0 otherwise | 0.036 | 0.19 |
| Dosurce1 | =1 if model uses data on FDI from IMF database; = 0 otherwise | 0.037 | 0.19 |
| Dsource2 | =1 if model uses data on FDI from OECD database; = 0 otherwise | 0.054 | 0.23 |
| Dsource3 | =1 if model uses data on FDI from other databases; = 0 otherwise | 0.221 | 0.41 |
| Dsource4 | =1 if model uses data on FDI from UNCTAD database; = 0 otherwise | 0.189 | 0.39 |
| Dsource5 | =1 if model uses data on FDI from World Bank database; = 0 otherwise | 0.499 | 0.50 |
| Idsource1 | =1 if the data for the governance measure in the model is taken from BERI database; = 0 otherwise | 0.021 | 0.14 |
| Idsource2 | =1 if the data for the governance measure in the model is taken from the Freedom House database; = 0 otherwise | 0.037 | 0.19 |
| Idsource3 | =1 if the data for the governance measure in the model is taken from the ICRG database; = 0 otherwise | 0.242 | 0.43 |

*continued*

| Moderator variable | Definition | Mean | Standard deviation |
|---|---|---|---|
| Idsource4 | =1 if the data for the governance measure in the model is taken from other sources; = 0 otherwise | 0.193 | 0.39 |
| Idsource5 | =1 if the data for the governance measure in the model is taken from the PRS database; = 0 otherwise | 0.029 | 0.17 |
| Idsource6 | =1 if the data for the governance measure in the model is taken from Polity database; = 0 otherwise | 0.120 | 0.33 |
| Idsource7 | =1 if the data for the governance measure in the model is taken from the Transparency International database; = 0 otherwise | 0.042 | 0.20 |
| Idsource8 | =1 if the data for the governance measure in the model is taken from the World Wide Governance Indicators from the World Bank database; = 0 otherwise | 0.315 | 0.46 |

## 5. Summaries of empirical studies included in meta-regression analysis

| Authors and year | Sample size | Study period | Dependent variable and source | Independent variable and source | Methodology | Findings |
|---|---|---|---|---|---|---|
| Gastanaga et al., (1998) | 49 less developed countries | 1970–1995 | Aggregate inward FDI in millions of US dollars (taken as FDI to GDP ratio) Source: IMF, Balance of Payments Statistics Yearbook | Various institutional variables – bureaucracy and corruption Source: Various sources | Pooled cross section and time series data | Bureaucracy – negative and significant Corruption – positive and significant |
| Globerman and Shapiro (2002a) | 115 developing and developed countries | 1995–1997 | US FDI Source: Bureau of Economic Analysis (both aggregate FDI flows and industry specific (2 high technology industries)) | World governance indicators Source: World Bank (Kaufman et al. 1999) | Cross sectional data | Law – positive and Insig-nificant Voice and accountability – positive and significant Political instability – positive and insignificant Government effectiveness – positive and significant Regulation – positive and significant Corruption – positive and significant |
| Globerman and Shapiro (2002b) | 114 developing and developed countries | 1995–1997 | Net inward FDI (=inward FDI – FDI outflows) averaged 1995–1997. Source: The world investment report, UNCTAD (1998) Annex B | World governance indicators Source: World Bank | Cross sectional | Governance – positive and significant |
| Hsiao and Shen (2003) | 23 developing countries | 1976–1997 | Total inward FDI flows as a percentage of gross domestic product (GDP) (in percentage values). Source: World Development Indicator CD Rom (2000) | Governance institutions | Panel data | Absence of corruption – positive and insignificant |
| Anghel (2004) | 80 countries | 1996–2000 | Net FDI as a percentage of average GDP Source: World Bank | Governance institutions (5 indicators are used gov-ernment effectiveness, regulatory quality, rule of | Cross sectional data | Political stability – positive and significant Government effectiveness – positive and significant |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | law and control of corruption)<br>Source: World Bank governance indicators, Kaufman et al. (2004) | | Rule of law – positive and significant<br>Control of corruption – positive and significant |
| Globerman and Shapiro (2004) | 154 countries | 1995–2001 | Merger and Acquisition inflows.<br>Source: UNCTAD | Governance indicators.<br>Source: World Bank, Kaufmann et al. (2003). | Panel data | Governance – positive and significant |
| Gani (2007) | 17 countries from Asia and Latin America | 4 periods – 1996, 1998, 2002, 2004 | FDI as a share of GDP<br>Source: World Bank (2004) | Governance indicators.<br>Source: World Bank, Kaufmann et al. (2003). | Panel data | Rule of law – positive and significant<br>Control of corruption – positive and significant |
| Hur et al. (2007) | 172 countries | 1995–2002 | Merger and Acquisition flows<br>Source: UNCTAD | Governance indicators.<br>Source: World Bank, Kaufmann et al. (2003). | Panel data | Governance – positive and significant |
| Adeoye (2009) | 33 emerging countries | 1997–2002 | Inwards FDI as % of GDP<br>Source: World Bank | Governance indicators.<br>Source: World Bank, Kaufmann et al. (2003). | Panel data | Governance – positive and significant |
| Wernick et al. (2009) | 64 emerging economies | 1996–2006 | Inward FDI measured in millions of US dollars<br>Source: World Bank | Overall governance<br>Source: World Bank, Kaufmann et al. (2003). | Panel data<br>OLS technique | Governance – Positive and significant |
| Ali et al.,(2010) | 69 countries Sectoral analysis | 1981–2005 | FDI net inflows expressed as a percentage of GDP.<br>Source: World Bank, World Development Indicators. | Institutional quality comprising of an investment profile index and law and order / Source: ICRG | Panel data | Governance – positive and significant |
| Muhammad et al. (2011) | 7 Asian economies | 1996–2007 | Inward FDI<br>Source: Central banks of each country | Institutional quality<br>Source: World Bank, Kaufmann et al. (2003). | Panel data – Fixed effect and Random effect model | Governance – positive and significant effect |
| Jadhav (2012) | 5 BRICS nations (Brazil, Russia, India, China and South Africa) | 2000–2009 | Inward FDI in billion dollars<br>Source: World Bank | Voice and accountability<br>Government effectiveness<br>Regulatory quality<br>Rule of law Corruption<br>Political stability | Panel data | Regulatory quality – positive and insignificant<br>Rule of law – positive and significant<br>Democracy – negative and significant<br>Political stability – negative and insignificant<br>Control of corruption – positive and insignificant |

| | | | | | | |
|---|---|---|---|---|---|---|
| Luca and Spatafora (2012) | 103 countries | 2001–2007 | Private capital flows (which includes debt and equity) as a share of nominal GDP Source: Global development finance, World Bank (2011) | World governance indicators Source: World Bank | Cross country and panel data analysis – OLS, IV, GMM techniques | Mixed results both in effect and significance |
| Habib and Zurawicki (2001) | 111 countries | 1994–1998 | Source: International Monetary Fund | Corruption / Source: Private risk assessment company | Panel data - OLS | Corruption – negative and significant |
| Wei (2001) | 93 countries | 1994–1996 | Source: OECD | Corruption / Source: World development indicators | Panel data – random effects model | Corruption – negative and significant |
| Teksoz (2004) | 102 countries | 1995–2000 | Net inward FDI as a percentage of GDP (GDP measured in current inter-national dollars) / Source: World development indicators | Corruption / Source: Global competitiveness reports | Panel data – OLS, 2SLS | Corruption – positive and significant |
| Voyer and Beamish (2004) | 59 countries | 2000–2001 | Japanese FDI per capita Source: Toyo Keizai | Corruption / Source: The Transparency International Corruption Index (CPI) – 2002 | Cross sectional – linear regression | Corruption – positive and significant in case of emerging economies. Positive and insignificant in case of industrialised |
| Straub and Edinburgh (2005) | 106 countries | 1995–1999 | FDI flows as a share of total private capital flows Source: IMF's International Financial Statistics Database | Corruption / Source: Corruption Index from International Country Risk Guide | Panel data | Corruption – negative and significant |
| Dahlstrom and Johnson (2007) | 99 countries | 1996–2002 | Total annual flows of FDI millions of US$ Source: World development indicator (2004) | Corruption / Source: Transparency Interna-tional Corruption Percep-tion Index (2004) | Panel data – Ran-dom effects model | Corruption – negative and significant |
| Khamfula (2007) | 18 countries | 1994–2004 | FDI/Nominal GDP Source: IMF International Finance Statistics | Corruption / Source: Centre for corruption research | Panel data – Fixed effects | Corruption – positive and significant effect |
| Sadig (2009) | 117 countries | 1984–2004 | FDI per capita Source: UNCTAD | Corruption / Source: International country risk guide (ICRG) | Panel data – OLS | Corruption – negative and significant |
| Woo and Heo (2009) | 8 non-OECD countries | 1984–2004 | Ratio of a nations share in world inward FDI to its share in global GDP / Source: | Corruption level / Source: International country risk guide (ICRG) | Panel data | Corruption – negative and significant |

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|---|---|---|---|---|---|---|
| | | | UNCTAD | | | Democracy – negative and insignificant (Non OECD Asian countries)<br>Democracy – positive and significant in case of |
| Mathur and Singh (2013) | 29 countries (emerging or developing) | 1980–2000 | Net inward FDI / Source: IMF | Corruption perception | Panel data - Random effects GLS | Corruption – positive and significant |
| Singh and Jun (1995) | 31 countries | 1970–1993 | RFDI = FDI flows in constant dollars relative to real GDP.<br>Source: World Debt tables, World Bank. | Political risk index.<br>Source: Business Environment Risk Intelligence, S.A. (BERI) | Pooled time series and cross sectional analysis. | Political risk – positive effect but the results are not robust |
| Busse and Hefeker (2005) | 83 developing countries | 1984–2003 | FDI net inflows per capita in current US dollars (FDI).<br>Source: UNCTAD (2005). | 12 category political risk Index and institutions<br>Source: International Country Risk Guide (ICRG) | Panel data | Government stability, absence of internal conflict and tensions, democratic rights, law and order have a significant effect |
| Baek and Qian (2011) | 22 industrialised and 94 developing countries | 1984–2008 | Stock of FDI in the host country. | 12 category political risk Index and institutions<br>Source: International Country Risk Guide (ICRG) | Panel data – Basic gravity model | Political stability – positive and significant effect in case of all and developing countries. |
| Zheng (2011) | 135 developing countries | 1980–2008 | FDI net inflows as a percentage of GDP.<br>Source: World Development Indicators (WDI) database. | Democracy<br>Source: Henisz's (2000a) political constraints index polcon. | Time series cross sectional data | Democracy – positive and significant |
| Li and Resnick (2003) | 53 countries | 1982–1995 | FDI net inflows measured in billions of current US dollars.<br>Source: World Bank's World Development Indicators. | Democracy – Polity IV<br>Property rights protection index / Source: Stephen Knack and Philip Keefer for the IRIS centre at the University of Maryland. | Pooled time-series cross section data | Democracy has both positive and negative effects |
| Ahlquist (2006) | 80 developing countries | 1985–2002 | Net inward FDI.<br>Source: World Bank | Institutional quality | Unbalanced panel time series | Governance – positive and significant |
| Goodspeed et al. (2010) | 53 countries for tax rates.<br>47 countries for the corruption index. | 1984–2002 for tax rates.<br>1995–2002 for corruption index. | Aggregate stock of FDI<br>Source: UNCTAD.<br>FDI stock of destination country / Source: OECD | Policy variables = Infrastructure quality<br>Source: World Bank.<br>Good governance = cor- | Panel data | Overall governance = negative and significant<br>Corruption = negative and insignificant and significant |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 37 countries for infrastructure index. | 1996–2002 for infrastructure index. | | ruption perception index and government efficiency.<br>Corruption perception index<br>Source: Transparency International.<br>Government efficiency<br>Source: IMD Competitiveness Yearbook. | | |
| Arbatli (2011) | 46 countries | 1990–2009 | FDI as a percentage of FDI.<br>Source: IFS, World Investment Report Database. | Law and order; bureaucracy quality<br>ICRG | Panel data | Law and order – negative and insignificant<br>Bureaucracy – negative and insignificant |
| Davis (2011) | 109 states | 1980–2005 | Inward FDI in millions of US dollars.<br>Source: World Development Indicators (WDI, World Bank, 2007). | Democracy<br>Source: Polity IV | Cross sectional time series | Democracy – negative and insignificant |
| Gordon et al. (2012) | 124 countries | 1996–2009 | Foreign direct investment inflow data in current US dollars.<br>Source: World development indicator (WDI) database published by the World Bank. | Democracy, Political stability, corruption, regulation, government effectiveness and law<br>Source: World Bank, Kaufmann et al. (2003). | Panel data | All governance variables show mixed effects |
| Fan et al. (2009) | 61 countries | 1961–2003 | Per capita FDI in constant 2000 US$ winsorized at 5%.<br>Source: World Bank, World Development Indicators database. | Rule of Law.<br>Source: International Country Risk Guide. | Panel data. | Law – positive and significant |
| Busse et al. (2011) | 82 countries | 1984–2004 | Absolute bilateral inward FDI. / Source: UNCTAD. | Political risk<br>Source: International Country Risk Guide. | Panel data | Political stability – positive and significant |
| Harms and Ursprung (2002) | 62 developing and emerging market countries | 1989–1997 | Average level of per capita FDI.<br>Source: World Bank. | Democracy<br>Source: Freedom House (2000) | Panel data | Democracy - Positive but statistically mixed effect |

| | | | | | | |
|---|---|---|---|---|---|---|
| Jensen (2003) | 79 countries for cross sectional data.<br>114 countries for time-series cross-sectional data. | 1990–Cross sectional.<br>1970–1997 for time-series cross-sectional data. | Cross sectional - Average net inward FDI as a percentage of GDP.<br>Time-series cross-sectional – Annual inward FDI as a percentage of GDP.<br>World Bank's World Development Indicators 1999. | Democracy – Polity III data Jagger and Gurr 1996;<br>Corruption, Rule of law, Corruption and Bureaucracy – Easterly Data Set, Easterly 1999 | Cross sectional data for 1999;<br>Time series cross-sectional analysis | Democracy has positive and significant effect; others – insignificant |
| Jensen and McGillivray (2005) | 115 countries | 1975–1995 | Inward FDI as a percentage of GDP / Source: World Bank's World Development Indicators, 1999. | Democracy<br>Source: Marshall and Jaggers (2000). | Cross-sectional time-series data | Democracy – positive and significant |
| Busse (2004) | 69 developing and emerging market countries | 1972–2001 | Foreign direct investment per capita, net inflows in current US dollars.<br>Source: UNCTAD, 2003. | Democracy<br>Source: Freedom House (2002) data for political rights and civil liberties. | Panel data | Democracy – positive and significant effect from 1990 onwards |
| Blanton and Blanton (2007) | Non-OECD countries | 1980–2003 | Net inward FDI as a per-centage of total GDP.<br>Source: World Development Indicators, World Bank, 2005. | Democracy<br>Source: Developed by Stohl, Gibney, Poe and Co-researchers. | Time-series cross-sectional data | Democracy – positive and significant |
| Choi (2008) | Developing countries | 20 years | Foreign direct investment as a ratio of GDP in dollar amounts. | Democracy<br>Source: Polity IV | Pooled panel data | Democracy – positive and significant |
| Guerin and Manzocchi (2009) | 14 OECD source countries and 24 emerging host countries. | 1992–2004 | Bilateral gross inward FDI from source country to host country in constant 2000 US dollars.<br>Source: OECD International Direct Investment Database (2006 release). | Democracy<br>Source: The Freedom House Political Right index. | Panel data | Democracy – negative and significant |
| Doces (2010) | 55 countries | 1990–1999 | Inward flows of FDI mea-sured in millions of dollars.<br>Source: World Bank. | Democracy<br>Source: Polity IV | Panel data | Democracy – positive and significant |

## 6. Overview of study

| Field | Search engines used | Types of studies included | Effect size | Number of studies (estimates) | Countries | Aim of the study |
|---|---|---|---|---|---|---|
| Measures of gov-ernment and FDI | Google, Web of Knowledge | English language studies – published and unpublished | Partial correlation | 48 (771*) | South and East Asia and Pacific countries as de-fined by world bank + South Korea | Parameter estimate and heterogeneity |

*Total number of estimates (combining all measures of governance) 7. Precision Effect Test (PET)

### 7.1 Simple meta regression – Precision effect test (PET)

| | Voice and accounta-bility | Political stability | Govern-ment ef-fectiveness | Regu-lation | Law | Corrup-tion | Aggre-gate gov-ernance |
|---|---|---|---|---|---|---|---|
| PET (Unweighted) | -0.03 (-1.70) $R^2$=0.25 | 0.02 (0.35) $R^2$=0.05 | 0.05 (0.74) $R^2$=0.03 | 0.08 (2.44) $R^2$=0.46 | 0.04 (1.60) $R^2$=0.09 | -0.05 (-1.73) $R^2$=0.12 | 0.08 (1.44) $R^2$=0.02 |
| PET (Weighted) | -0.02 (3.65) $R^2$=0.08 | 0.10 (3.50) $R^2$=0.13 | 0.00 (0.01) $R^2$=0.01 | 0.09 (2.43) $R^2$=0.55 | 0.13 (11.33) $R^2$=0.19 | -0.04 (-1.00) $R^2$=0.10 | 0.04 (0.91) $R^2$=0.02 |
| N | 149 | 154 | 36 | 51 | 42 | 166 | 62 |

### 7.2 Multiple meta regression – Precision effect test (PET)

| | Voice and accountability | Political stability | Government effectiveness | Regulation | Law | Corruption | Aggregate governance |
|---|---|---|---|---|---|---|---|
| PET (Weighted) | 0.12 (6.03) Adj.R2=0.87 | -0.96 (-6.10) Adj.R2=0.90 | 0.17 (2.37) Adj.R2=0.14 | 0.66 (8.05) Adj.R2=0.80 | 0.27 (4.53) Adj.R2=0.76 | 0.10 (1.71) Adj.R2=0.71 | 0.07 (2.19) Adj.R2=0.42 |
| PET (Clustered) | 0.12 (2.43) R2=0.88 | -0.96 (-4.17) R2=0.91 | 0.17 (7.95) R2=0.19 | 0.66 (6.72) R2=0.81 | 0.27 (12.40) R2=0.79 | 0.10 (1.35) R2=0.73 | 0.07 (1.51)] R2=0.45 |
| N | 149 | 154 | 36 | 51 | 42 | 166 | 62 |

## Notes

1. Similar to corruption, political stability was considered in two ways – political stability and political instability. For aggregating these studies, political instability was transformed into political stability by inversion and multiplying both coefficient and t-value with –1.
2. Low governance should be interpreted as less democracy, low political stability, less regulation, lower levels of government effectiveness, less of rule of law, high corruption and low overall governance.
3. We have tested for publication bias using Funnel Asymmetric Test (FAT) and Precision Effect Test (PET). While FAT suggests the presence of publication bias and PET confirms the genuine effect of these measures on FDI beyond publication bias. We have explored these aspects in a different study.
4. We see the same downward trend in these graphs taking an end year of sample period instead of an average year.
5. There were about 15 different types of interaction terms ranging from a minimum of 1 to a maximum of 11 observations.
6. There were only 2 different non-linear terms with less than 12 observations.

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