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Lund University

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Behave and Be Attractive:

The Impact of Governance on FDI Inflows

By Martin Hessel

Supervisor: Yves Bourdet

Abstract

This paper examines how governance affects FDI inflows using cross-country analysis for a sample of 156 countries over the period 1996-2004. It looks into six different dimension of governance, measured by indicators constructed by Kaufmann, Kraay and Zoido-Lobatón: (1) Voice and Accountability, (2) Political Stability and Violence, (3) Government Effectiveness, (4) Regulatory Quality, (5) Rule of Law and (6) Corruption. The conclusion is clear: governance matters to FDI and it does so irrespective of which governance dimension one looks at. Countries with good governance attract more FDI than countries with weak governance, given market size, macroeconomic stability, openness to trade and regional idiosyncrasies. This holds for different samples, over different time periods and is robust to the change of control variables. Furthermore, the return to governance improvements in terms of increased FDI inflows is large.

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1. Introduction

Foreign Direct Investment (FDI) flows have grown enormously throughout the world during the 1990s. In addition to being an important source of external financing, FDI is viewed by policy makers as a springboard to development. FDI is expected to bring new technology, jobs, access to new export markets and –as a result of all this– economic growth.

The quest for FDI has brought about policy changes and economic reforms that have far-reaching implications. A study carried out by UNCTAD estimated that over the period 1991-1999, 94 per cent of the 1,035 policy changes reviewed favored foreign direct investors (UNCTAD, 2000 p. 6).

Policy-makers, investment promotion experts and development agencies repeatedly emphasize the importance of good governance for attracting FDI. Often, good governance is highlighted as *the* key country characteristic to exert a pull on FDI, overshadowing economic factors such as macroeconomic stability and market size.

The alleged strong relationship between FDI and governance is often based on a general understanding that public institutions and policies are important determinants of the business environment in which firms, domestic and foreign, operate. For friends of liberal Western institutions and democracy this is normative appealing, but is it supported by data? Various econometric studies look into this issue, but the bulk of them use composite indicators reflecting numerous different aspects of institutions and policies, which makes it impossible to assess how different features of governance affect FDI flows. This paper examines how governance affects FDI inflows using an aggregated measure of overall governance as well as disaggregated governance data in a cross-country analysis for a sample of 156 countries over the period 1996-2004. The purpose is to investigate whether there is a link between the governance situation of a country and the amount of FDI it attracts. The paper also examines whether the effect of governance on the distribution of FDI flows across countries diverge between different dimensions of governance. The paper is distributed as follows:

Section 2 outlines the concept of governance used in the econometric analysis and discusses previous empirical research on governance and FDI. In section 3, the data and variables used in the empirical analysis are described. Section 4 presents the results of cross-country econometric analysis for different samples and time periods. Finally, section 5 concludes.

2. The concept of governance and previous empirical research

2.1 The concept of governance

That governance is central to economic relations is by no means a new finding. In the *Wealth of Nations*, Adam Smith stated that:

Commerce and manufactures can seldom flourish long in any state which does not enjoy a regular administration of justice, in which the people do not feel themselves secure in the possession of their property, in which the faith of contracts is not supported by law, and in which the authority of the state is not supposed to be regularly employed in enforcing the payment of debts from all those who are able to pay. Commerce and manufactures, in short, can seldom flourish in any state in which there is not a certain degree of confidence in the justice of government.

This quote is an illustrative expression for what economists generally see as "good governance" – security of property rights and a stable legal environment in which contracts can be established and enforced.[1] The "good government" is the government that establishes and enforces a legal framework in which economic relations can securely take place, without intervening too much in those relations. In a widely cited paper, Hall and Jones (1998), which uses the concept "social infrastructure" to define the institutions and government policies that determine the economic environment, put it like this:

"*Social institutions to protect the output of individual productive units from diversion are an essential component of a social infrastructure favorable to high levels of output per worker". (…) Paradoxically, while the government is potentially the most efficient provider of social infrastructure against diversion, it is also in practice a primary agent of diversion throughout the world".*

This study takes a view on governance that encompasses but goes beyond the protection of property rights and the enforceability of contracts. It looks into six different dimension of governance, measured by indicators constructed by

[1] The word "good" as it is used in this context means "good for economic growth" or "good for business". Whether that "good" is different from "good for society" or not is a question of ideological judgement.

Kaufmann, Kraay and Zoido-Lobatón (hereafter KKZ)[2]: (1) V*oice and Accountability* (the government's accountability to citizens through democratic institutions and free press), (2) *Political Stability and Violence* (the likelihood of violent threats to, or changes in, government, including terrorism), (3) *Government Effectiveness* (the competence of the bureaucracy and the quality of public service), (4) *Regulatory Quality* (the incidence of market-unfriendly policies), (5) *Rule of Law* (the quality of contract enforcement, the police and the courts, as well as the likelihood of crime and violence), and (6) *Corruption* (the extent of exercise of public power for private gain).

These six governance indicators can be ordered into three different clusters, which are conceptually different from each other and that together form a broad notion of governance: (i) the process by which governments are selected, monitored and replaced (Voice and Accountability and Political Stability and Violence); (ii) the capacity of the government to effectively formulate and implement sound policies (Government Effectiveness and Regulatory Quality); and (iii) the respect of citizens and the state for the institutions that govern economic and social interactions among them (Rule of Law and Corruption)

There is a large and growing literature that studies the effects of different dimensions of governance on economic performance. For example, Hall and Jones (1998) find a close association between output per worker and measures of "social infrastructure" across 127 countries. Kaufmann *et al* (1999b) establish a casual relationship between the KKZ measures of governance and income per capita, infant mortality and literacy for 152 countries. Rodrik *et al* (2002) study the effect of institutions, geography and trade on incomes across 140 countries and conclude that "the quality of institutions trumps everything else".

A great deal of this research is inspired by Douglass North, who defines institutions as "humanly devised constraints that structure human interaction" (North, 1994). Hence, many studies focus on formal and informal mechanisms that structure and put limit to public policy and do not examine the policies

[2] See Kaufman *et al*,(1999a); Kaufman *et al* (2005)

themselves. The concept of governance in this paper, however, encompasses institutions *as well as* policies. This broad approach is sensible since both institutions and policies, in conjunction, create the environment in which economic agents (such as foreign investors) operate and it is the effects of this environment on the behavior of foreign investors that we are interested in here.

2.2 Review of the empirical research

The study of the effects of governance on FDI is a logical extension of the literature that investigates the relationship between governance and economic growth. Economic growth, and thus differences in income levels across countries, is determined by capital accumulation (physical and human), labor input and productivity. FDI enters the growth equation both as a form of capital and through its effect on productivity. In other words, FDI may be one of the channels through which governance affect economic growth.

Since the theoretical framework that dominates the studies on FDI determinants is a fairly lax one, there are no clear-cut theoretical predictions about the effects of governance on FDI. The dominating theoretical perspective[3] sees good governance in general as a location advantage, which attracts multinational firms to the countries possessing this advantage. Factors such as political stability, predictable public policy, legal systems that protect property rights and competent civil servants are seen as elements of a business-friendly environment, where foreign investors will be willing to locate production and carry out transactions.

Business climate surveys may provide valuable information about the location advantages that matter to multinational firms. The World Business Environment Survey (World Bank, WBES database), surveyed over 10 000 firms in 80 countries at the end of the 1990s. Although it does not focus exclusive on multinational firms it can still give a fair hint as to the importance of governance to the investment climate. Table 1 displays the percentage of firm managers or firm owners that identified a certain factor as a severe obstacle to business operations. The indicators are related to several of the governance dimension that

[3] See Dunning (1993) for an outline of the so-called OLI-paradigm.

this paper investigates: Government Effectiveness, the Rule of Law, Regulatory Quality and Corruption. The results clearly lend themselves to the hypothesis that governance does matter to firms.[4]

Table 1: Selected indicators from the World Business Environment Survey

	Tax administration	Customs and trade regulations	Labor regulation	Business licensing and permits	Economic and regulatory policy uncertainty	Corruption	Crime, theft and disorder	Legal system
East Asia & Pacific	24.73	19.81	20.58	18.22	36.45	36.04	24.89	27.33
Europe & Central Asia	27.36	16.71	9.12	14.08	39.56	22.48	16.92	17.21
Latin America & Caribbean	41.28	26.56	30.29	20.56	63.19	61.87	51.76	29.63
Middle East & North Africa	36.16	14.09	12.85	27.45	..	35.25	..	..
South Asia	35.06	23.70	16.16	14.64	32.45	40.22	22.37	..
Sub-Saharan Africa	46.93	35.21	15.04	13.91	40.59	47.14	31.77	22.92

Source: World Bank, WBES database

There is a steadily growing literature on governance and FDI. The following part of this section provides a brief description of what each of the six KKZ governance indicators intends to measure, as well as an overview of recent research structured along the lines of these six dimensions of governance. Concepts of governance examined by other researchers will often fall partly outside or overlap a particular dimension. Furthermore, the common use of composite indexes that include all sorts of institutional and risk measures blur the distinction between different aspects of governance. However, although admittedly crude, this structure will facilitate contrasting the results of this study with those of others.

2.2.1 Voice and Accountability

The Voice and Accountability indicator measures the extent to which citizens participate in the political process and to which extent the government is accountable to the citizens through media and elections. Theory does not give

[4] There is no point in using this data to assess the relative importance of the different aspects of governance, since a factor that is vital to firms without constituting an obstacle recieves a lower "score" than a less important factors that is seen as a constraint.

much guidance as to how this core feature of democracy affects FDI. A frequent argument in the popular debate is that multinational firms ignore political rights and support repressive regimes by helping them exploit poor countries' scarce resources. Although these cases may very well occur, the scant econometric research that exists on the subject show that FDI favors democracy. Harms and Ursprung (2001) and Busse (2003) both investigate the relationship between FDI and political and civil liberties as measured by the Freedom House. They both find similar results for samples of developing countries and emerging economies: countries with high degrees of political and civil liberties attract more FDI. Addison and Hesmati (2003) also, find an index capturing different aspects of democracy to affect FDI positively for a sample of 110 countries.

However, none of these studies convincingly reveal the mechanism through which this positive effect works. Addison and Hesmati (2003) argue that democracy affect FDI through institutions. In democracies, the claim, economic policy is under oversight of parliament and civil society, which encourages a more stable policy environment for investors. Busse (2003) argues that the positive effect of democracy on FDI has grown stronger in the 1990s because of two reasons. First, the shift in the structure of FDI flows from the primary sector towards services and manufactures has made foreign investors less dependent on maintaining good relations with repressive regimes in resource-rich countries. Second, the increasing attention that multinational firms' investment locations receive from civil society has made investors sensible to the costs of negative publicity from investing in countries with oppressive governments.

2.2.2 Political instability and Violence

Political Stability and Violence measures the extent to which the government is selected and replaced by established rules or overthrown by violent and/or unconstitutional means. Many studies on FDI include some measure of political instability and violence as one of many variables, but to my knowledge no study focuses exclusively on this aspect of governance. One reason for this could be that the relationship seems obvious: political instability impinges directly on the continuity of policies, which renders investment returns uncertain. Violence has

the same effect and could even pose a physical threat to personnel and premises of multinational firms.

Busse and Hefeker (2005), Wesel (2003), Asiedu (2003) all find that a high degree of political instability and violence (as measured by different variables, in different samples) affect FDI inflows negatively. Kolstad and Villanger (2004) find mixed evidence for political stability the service sector FDI, with stability being irrelevant for FDI in most sub-sectors. Desbordes and Vicard (2005) show that internal and external armed conflicts discourage FDI.

2.2.3 Government Effectiveness

Government Effectiveness intends to capture the competence of the bureaucracy and the quality of public service. The indicator also includes the independence of the civil service from political pressure and the credibility of the government's commitment to policies. As showed by the WBES survey presented above, policy and regulatory uncertainty hamper business operations. Even if regulations are business friendly, they need to be applied in a predictable and efficient manner in order to have full effect, which cannot be done if civil servants are incompetent or if politicians interfere in their day-to-day business.

Busse and Hefeker (2005) and Bénassy-Queré *et al* (2005) find a positive relationship between measures of Government Effectiveness and FDI.

2.2.4 Regulatory Quality

Regulatory Quality is closely related to Government Effectiveness. While the Government Effectiveness encompasses the input necessary to formulate and implement sound policies, Regulatory Quality focuses on the policies themselves. Regulatory Quality captures the incidence of market-unfriendly policies, such as price controls or excessive trade regulations. This particular attribute of governance affects firms, and thereby also FDI, by definition, because market unfriendly policies and regulations are those that constrain business operations.

Buch *et al* (2003) use the presence of capital controls and multiple exchange rate as proxies for regulatory quality and find that the presence of capital controls lower FDI, while multiple exchange rates surprisingly increases FDI.

2.2.5 Rule of Law

Rule of Law measures the extent to which agents have confidence in and abide by the rules of society. This includes the quality of contract enforcement, the police and the courts, as well as the likelihood of crime and violence. Theoretically, its effect on FDI is quite straight forward: firms and investors need stable rules of the game where contracts can be established and enforced, where transactions can be carried out without being subject to fraud and where infringements of the law can be pursued through the judicial system.

Campos and Kinoshita (2003), Campos and Kinoshita (2004), Busse and Hefeker (2005) and Asiedu (2003) all find measures of the Rule of Law to have a positive effect on FDI.

2.2.6 Corruption

Corruption, defined as the exercise of public power for private gain, may affect FDI through several channels. Indirectly, corruption may hamper economic growth by distorting competition, diverting capital towards non-productive activities and negatively affect the provision of public services.[5] Directly, corruption adds to the "cost of doing business", making it more expensive, and uncertain, to invest and make transactions. Some analyst claim, however, that corruption may facilitate business by constituting an instrument for circumventing inefficient regulations.[6] Wei (2000b) argues that direct investors are more cautious to invest in corrupt countries than other international investors, because direct investors need to deal with corrupt bureaucrats more frequently and because the fact that FDI involves great sunk costs that put direct investors in a particular weak bargaining position *visavi* extortive public officials once the initial investment has been made.

[5] See Kennedy (2003)
[6] See Kaufmann and Wei (2000) for a discussion about the "grease the wheele debate".

Wei (2000a) shows that corruption in the home country has a negative impact on the level of FDI and Wei (2000b) demonstrates that corruption tends to tilt the composition of capital flows away from FDI towards portfolio capital and bank loans. Hakkala *et al* (2005) conclude from their firm-level study that corruption deters direct investors, but that it decreases horizontal FDI and increases vertical FDI, given that a firm already invests in a country. Teksöz (2005) shows that different forms of corruption may affect FDI in different directions by demonstrating that corruption in the field of import/export permits has a positive effect on FDI.

Judging from the above review, there is no doubt that governance matter to FDI. It is much trickier, however, to formulate any hypothesis about the relative importance of the different dimensions of governance, since few studies address this issue. Furthermore, the linkages between the different aspects of governance are bound to be complex. In many countries they are likely to go hand in hand (as in Sweden), while in others they may not. An autocratic regime, under which the government is not accountable to the citizens, may still have an effective bureaucracy (as Singapore) or may be politically more stable than a fragile democracy (as China). A very cautious hypothesis is that all six governance dimensions affect FDI inflows positively, but that the effect is weaker for some indicators and stronger for others.

2.3 The Shapiro and Globerman study

Globerman and Shapiro (2002) is to my knowledge the only study that tries to assess the effects of the KKZ governance indicators on FDI. The study consists of cross-country regressions on a sample of 144 countries, using the first set of KKZ indicators that was published in 1997. Globerman and Shapiro regress the log of FDI inflows on an aggregate measure of governance estimated as the first principal component of the six KKZ indicators. In the model that they present, the only included control variable is the log of GDP. The aggregate governance measure is found to have a positive and significant effect on FDI inflows and the effect is robust to changes in the sample. When the aggregate governance measure is interacted with GDP, the interaction term enters with a negative sign. The

authors suggest that this shows that there are “diminishing returns” to governance improvements so that the greatest effects are felt by smaller economies, which are typically poorer. This particular finding should, however, not be taken too far, since it is significant only at the 10% level. The impact of the six different KKZ indicators is also tested for and they are all found to have a positive and significant effect on FDI inflows in a regression where GDP is the only control variable. Based on a comparison of the size of the coefficients of the KKZ indicators, Globerman and Shapiro conclude that Regulatory Quality and Government Effectiveness are the most important governance determinants of FDI.

My study differs from that of Globerman and Shapiro in several ways. First, the KKZ indicators are now available for five different time periods. I use data for 1996, 1998, 2000, 2002 and 2004, while their study is based on the data for 1996 only. Over time, the number of countries covered has increased, as has the number of individual governance indicators on which the estimates are based on. This permits me to include a larger number of countries in my sample, to exploit information from several time periods and should make the results more reliable. Second, Globerman and Shapiro control only for GDP in their final model. The reason is that they adopted the strategy of eliminating all control variables that were not statistically significant. Such a strategy may increase the risk for omitted variable bias. In contrast, I choose to control for openness to trade as well as macroeconomic instability and regional heterogeneity in addition to market size.

3. Data and variables

3.1 Governance

The six different dimension of governance are measured by indicators constructed by Kaufmann, Kraay and Zoido-Lobatón (KKZ): (1) Voice and Accountability (2) Political instability and Violence (3) Government Effectiveness (4) Regulatory Quality, (5) Rule of Law, and (6) Corruption.[7]

These indices have been aggregated employing 352 individual variables, taken from 37 sources, produced by 31 different organizations. Aggregate governance indicators have two important advantages over individual indicators. First, they are more informative about unobserved governance than any individual indicator. This means that aggregate indicators can provide more precise measures of governance than individual ones. Second, the aggregate indicators cover a larger set of countries, permitting cross-country comparisons that are not available for individual indicators. One drawback is however that, for each time period, the same dimension of governance is being estimated from different sources in different countries, with different precision, depending on the number of sources available for that particular indicator and country.

The indicators are estimated using two different types of sources: surveys of individuals or firms with first-hand knowledge of the governance situation the country concerned and analysts and experts from international organizations. Hence, the KKZ indicators are based on peoples' perceptions of the governance situation, rather than on just formal rules. This makes them suitable for the purpose of this study, since the location decisions of foreign investors are likely to be determined not only by *de jure* regulations, but also by the environment in which these regulations are applied. One potential source of problems is however, that perceptions are culturally determined and therefore differ across countries, which may give rise to measurement errors.

[7] See Kaufman et al (1999[a]), Kaufman et al (2005) and Kaufman (2003)

The governance estimates are normally distributed with a mean of zero and a standard deviation of one in each period. This means that all scores lie between -2.5 and 2.5, with a higher score indicating better governance. It also means that the indicators reflect the position of a country relative to other countries in the sample and are not measures of the absolute level of governance in a country.

The KKZ governance indicators cover 209 countries for 1996, 1998, 2000, 2002 and 2004.

3.2 FDI

It is important to note that aggregated data on FDI is not a perfect measure of the economic activities of multinational firms. It is not a measure of production, sales of firm assets, but just a source of financing that the firm makes use of.[8] However, due to the lack of readily available micro-data, I will have to rely on aggregated macro series. This leaves me with two alternative measures –FDI inflows or FDI stocks. I have chosen inflows over stocks for several reasons. Firstly, data on capital stock are not measured by any consistent method across countries and time periods. Secondly, data on stock is normally reported at book values without adjustment for inflation and exchange rate variations. Thirdly, and perhaps most importantly, FDI stock represents historical FDI flows. To the extent that FDI determinants have shifted over time, it would be misleading to relate current determinants to past flows.

3.3 Control variables

There is a vast amount of empirical studies regressing some measure of FDI on range of different variables. The differences in perspectives, methods and samples make it difficult to find an obvious set of control variables. My selection of control variables is based on an extensive review of the empirical literature. I have chosen a few variables that have been found to affect FDI in a large set of studies and for which a clear theoretical rationale can be found.

[8] See Stefano Manzocchi (2001) and Lipsey (2001)

3.3.1 Market size and market growth

The size of the host country market is a relevant determinant to the extent that the FDI is destined to serve the host market and not merely to set up an export platform. Larger markets should attract FDI because firms face economies of scale as FDI entails sunk costs (for example, in terms of adapting management to local conditions or getting familiar with host country legislation). Market growth should work in the same direction. Nunnenkamp (2002), Chakrabarti (2001) Campos and Kinoshita (2003), Braga Nonnenberg and Cardoso de Mendonca (2004), Addison and Heshmati (2003), Kolstad and Villanger, (2004) all find market size and/or growth to be relevant determinants of FDI.

Although they reflect quite different market characteristics, both GDP and GDP per capita are used as proxies for market size in the literature. While absolute GDP measures the absolute size of the economy, GDP per capita captures the average income level. GDP may in some cases be a relatively poor indicator of market potential for the products of foreign direct investors, since it tends to reflect the size of the population rather than its purchasing power. On the other hand, a high GDP per capita should not be a major factor of attraction if the country only has a limited number of consumers.

I choose to use GDP (PPP adjusted) and annual GDP growth as proxies for market size and market size growth. The main reason for not choosing GDP per capita is that it tends to be correlated with many different aspects of development and in that way act as a proxy for variables other than market size. Furthermore, governance has been shown to be highly correlated with GDP per capita (see Kaufman *et al* (1999b), Rodrik *et al* (2002) or Glaeser *et al* (2004)), which could blur the results.

3.3.2 Trade openness

Theory does not give any clear-cut answer to how trade barriers affect the level of FDI flows. “Horizontal” FDI tend to replace exports if the costs of market access through exports are higher than the net costs of setting up a local plant and doing business in a foreign environment. Traditionally, governments have used trade barriers to induce “tariff-jumping FDI”, i.e. horizontal FDI that takes place to

circumvent trade barriers. On the other hand, "vertical" FDI relies on a constant flow of intermediate products in and out of the host country and therefore benefits from a liberal trade environment. Trade barriers then should encourage "horizontal FDI" and discourage "vertical FDI" and its effect on the aggregate level of FDI depends on which type of FDI dominates.

Empirical studies nevertheless support a positive effect of openness on FDI. Chakrabarti (2001) finds the sum of imports and exports as a share of GDP to be the variable most likely to be positively correlated with FDI besides market size in an extreme bounds analysis. Braga Nonnenberg and Cardoso de Mendonca (2004) and Addison and Heshemati (2003) also find this variable to be positively correlated with FDI.

The problem with using trade as a share of GDP as a measure of trade policies is that it reflects a trade policy outcome, rather than trade regulations. However, I still choose to use this variable to control for openness to trade, because it is available for a larger set of countries than any alternative measure.

3.3.3 Macroeconomic stability

Macroeconomic stability directly affects the return to capital. More indirectly, it provides some certainty as for the future path of economic policy and thereby also for the ability of firms to repatriate profits or conduct other operations. It can also be seen as a sign of the underlying strength of the economy in the most general sense. The most common proxy for macro economic stability in studies on FDI determinants is the inflation rate. Oddekun (2003), Bengoa and Sachez-Robles (2002) and Braga Nonnenberg and Cardoso de Mendonca (2004) all find that the inflation rate affects FDI inflows negatively.

I choose to follow the conventional literature and include the inflation rate, measured by the annual change in the consumer price index, as a proxy for macroeconomic stability. Table 2 summarizes the variables and hypothesis.

Table 2: Variables and hypothesis

FDI determinant	Variable	Expected sign
Dependent: FDI inflows, net	FDI inflows, net	
Market size	GDP (PPP adjusted)	+
Market growth	annual GDP growth	+
Openness to trade	imports + exports as percentage of GDP	ambiguous
Macroeconomic Stability	Annual change in the Consumer Price Index	-
Overall governance	Unweighted average of the six KKZ indicators	+
Voice and Accountability	Voice and Accountability (KKZ)	+
Corruption	Corruption (KKZ)	+
Rule of Law	Rule of Law (KKZ)	+
Political Stability	Political Stability (KKZ)	+
Regulatory Quality	Regulatory Quality (KKZ)	+
Government Effectiveness	Government Effectiveness (KKZ)	+

3.4 Country sample and time periods

Due to the limited availability of governance data, the time period studied is 1996-2004. One should be aware of that the 1990s brought a FDI boom throughout the world of a previously unknown magnitude (see Chart A in the Appendix). Furthermore, there has been a structural shift in FDI towards the service sector (see UNCTAD, 2005). Hence, one should be careful not to apply the results from this study directly to FDI in previous decades.

The ambition was to find the largest possible sample of countries for which data on all relevant variables existed. The largest sample used in this study includes 156 countries (26 high income countries and 130 middle and low income).

4. Empirical analysis

4.1 Cross-country analysis 1996-2004

The following equation was estimated with Ordinary Least Square for a sample of 156 countries:

$$FDI_i = \beta_0 + \beta_1 GDP_i + \beta_2 Inflation_i + \beta_3 Growth_i + \beta_4 Openness_i + \beta_5 Governance_i + e_i$$

The governance indicators are averages for 1996-2004 and the rest of the variables averages for 1996-2003. Since the governance indicators are highly correlated with each other (see table 3 below), they are added one at a time to the regression in order to avoid multicollinearity.[9]

Table 3: Correlation Matrix for the governance indicators

	Voice and Accountability	Political Stability and Violence	Government Effectiveness	Regulatory Quality	Corruption	Rule of Law
Voice and Accountability	1					
Political Stability and Violence	0,78	1,00				
Governance Effectiveness	0,81	0,75	1,00			
Regulatory Quality	0,85	0,71	0,91	1,00		
Corruption	0,81	0,76	0,97	0,87	1,00	
Rule of Law	0,84	0,80	0,97	0,90	0,97	1,00

Note: Based on averages 1996-2004

An unweighted average of the six variables is also included as an explanatory variable, in order to measure overall governance. A variety of model specifications with different dependent variables were tested (FDI inflows, FDI as a share of GDP, an FDI-performance index and FDI per capita in no-log, semi-log and log-log specifications). Some of these did not pass the stability test (Ramsey

[9] An alternative way to get around this problem is to group variables that capture similar dimensions of governance and include the clusters simultaneously in the regressions. Various combination of clusters were tested, but they were all highly correlated with each other.

Reset test with 1-3 powers), others gave a poor fit. In the chosen specification, FDI inflows are scaled by population, all variables except the governance indicators are in logs, growth is dropped as a control variable and the equation estimated for 149 countries.[10] The logaritmic-transformation of the data reduces the weight of observations with extreme values (a problem with the inflation variable) that would otherwise dominate the estimation and makes it possible to interpret the coefficients in terms of elasticities. The regression results are presented in Table 4a.

Given the parsimonity of the model and the diversity of countries, the fit of the model is reasonable. Of the control variables, Openness and GDP are positive and significant in all the specifications. The size of the coefficients of GDP may seem small at firt sight, but they are not. A doubling of country size (which would also imply an increase of the *population* of roughly the same magnitude), keeping openness, inflation and governance constant, is associated with an increase in FDI *per capita* of between 12 and 37 percent. This means that the effect of market size on FDI goes beyond the effects of a larger population. Openess to trade excerts a very strong effect on FDI, with a doubling of the trade as a share of GDP being associated with and increase of FDI per capita of 149-184 percent, holding GDP, inflation and governance constant. The "Tariff-jumping" horizontal FDI is certainly not dominating; trade is a complement to FDI, not a substitute. Inflation is negative and significant only in the regression containing only the control variables. When governance variables are added, it becomes insignificant, except together with Voice and Accountability where it is barely significant. One explanation for this could be that countries with good governance tend to conduct sound macro economic policies, while weak governance implies a more lax fiscal and monetary policy. In fact, inflation is negaitvely correlated with all the governance indicators (r= –23 to –35, see table A in the Appendix).

[10] Due to the presence of negative values for FDI inflows and inflation, the following observations had to be dropped: Congo, Gabon, Indonesia, Japan, Lesotho, Oman and Yemen. Growth was first included as a control variable, but was insignificant and did not pass a standard redundant variable test. Furthermore, due to negative growth in various countries, the inclusion of this variable would force us to drop an additional 5 observations..

The overall governance level, as proxied by the Average Governance, is strongly and positively related to FDI. Each of the six governance indicators has a positive effect on FDI and, quite surprisingly, they are all strongly significant. Further, they all add explanatory power to the model. It is not possible to assess the relative importance of the different indicators by looking at the size of their coefficients, since they all have different means and standard deviations in this sample. However, it is possible to say how much a one standard deviation improvement in each variable increases FDI flows per capita.[11] This information is presented for each variable in table 4b. The increase in FDI per capita resulting from a one standard deviation improvement is very large for all indicators, ranging from an increase of 2,9 times (Political Stability) to 3,8 (Government Effectiveness), and 3,9 for Average Governance.[12] While this economic effect may seem extreme, a one standard deviation improvement constitutes a significant change in governance. In terms of the Average Governance indicator, it would roughly imply an improvement from the position of Lesotho to Estonia, or from Estonia to the UK. It should be emphasized that this measure says little about the impact of one governance indicator as compared to another, since it does not tell us what a one standard deviation improvement actually means, e.g. in terms of change in government policies.

[11] Using the formula exp(coefficient*standard deviation)

Table 4a: Cross-country analysis 1996-2004

Dependent: Log FDI per capita		Average Governance	Corruption	Voice and Accountability	Rule of Law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
log GDP	0,47***	0,18***	0,20***	0,33***	0,18***	0,12*	0,37***	0,18***
	(0,07)	(0,06)	(0,06)	(0,05)	(0,06)	(0,07)	(0,06)	(0,06)
Log Openness	2,45***	1,54***	1,81***	1,84***	1,63***	1,66***	1,49***	1,78***
	(0,31)	(0,31)	(0,31)	(0,30	(0,31)	(0,33)	(0,31)	(0,30)
Log Inflation	-0,53***	0,04	-0,06	-0,14*	0,00	0,00	-0,12	0,00
	(0,10)	(0,10)	(0,09)	(0,08)	(0,10)	(0,10)	(0,10)	(0,10)
Governance		1,57***	1,23***	1,20***	1,35***	1,41***	1,17***	1,48***
		(0,15)	(0,13)	(0,12)	(0,14)	(0,16)	(0,15)	(0,16)
R2 Adj	0,45	0,68	0,63	0,66	0,64	0,64	0,60	0,66
No. of obs	149	149	149	149	149	149	149	149

Note: ***significant at 1% level; ** significant at 5% level; *significant at 10% level. Values in parenthesis are Whites' robust standard errors. All the specifications passed the Ramsey Reset test with 1, 2 and 3 powers.

Table 4b Effect on FDI per capita of an improvement of 1 standard deviation

	Average Governance	Corruption	Voice	Rule of Law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
Coefficient	1,57	1,23	1,20	1,35	1,41	1,17	1,48
Strd. Dev.	0,87	0,97	0,94	0,93	0,94	0,90	0,87
Effect	3,89	3,29	3,07	3,53	3,76	2,87	3,61

4.2 Controlling for regional differences

In order to account for structural differences across regions not accounted for by the control variables, seven regional dummies were added to the previous specification. The regressions results are presented in table 5a. The regional dummies take a value of one if the country belongs to a region not being Western Europe. The dummies for East Asia & Pacific, Sub-Saharan Africa, Middle East & North Africa and South Asia are negative and highly significant in all specifications, while Eastern Europe & Central Asia, Latin America & the Caribbean are negative or insignificant. Only the dummies for North America are insignificant in all the regressions. In other words, countries located in regions outside the Western World attract less FDI, even when controlling for market size, macroeconomic stability, openness and governance. This could be attributable to some omitted variable(s) common for all regions or to structural factors different to each region.

All the governance indicators are still positive and highly significant, although the coefficients are smaller compared to the full-sample regression without regional dummies, which could be explained by correlation between the governance variables and the possibly omitted variable(s). Looking at the effects of a one standard deviation improvement in the governance indicators, reported in table 5b, they are still very important. Such an improvement would lead to an increase in FDI per capita of between 1,8 (for Political Stability) to 2,6 (for Government Effectiveness). An improvement of one standard deviation of the overall governance situation in a country would boost FDI inflows by a factor of 2,5.

Table 5a: Cross-Country analysis 1996-2004, including regional dummies

Dependent: log FDI per capita		Average Governance	Corruption	Voice and Accountability	Rule of Law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
log GDP	0,28***	0,19***	0,20***	0,26***	0,18***	0,14***	0,27***	0,14**
	(0,06)	(0,06)	(0,06)	(0,05)	(0,06)	(0,07)	(0,05)	(0,06)
log Openness	1,83***	1,44***	1,57***	1,64***	1,43***	1,50***	1,48***	1,50***
	(0,30)	(0,35)	(0,35)	(0,33)	(0,36)	(0,37)	(0,31)	(0,34)
log Inflation	-0,32***	-0,06	-0,13	-0,16	-0,08	-0,08	-0,15	-0,06
	(0,11)	(0,10)	(0,10)	(0,10)	(0,10)	(0,10)	(0,11)	(0,10)
Governance		1,06***	0,89***	0,74***	0,98***	1,01***	0,63***	0,92***
		(0,19)	(0,18)	(0,14)	(0,18)	(0,21)	(0,15)	(0,17)
East Asia & Pacific	-2,73***	-1,47***	-1,28***	-1,88***	-1,40***	-1,47***	-2,25***	-1,84***
	(0,43)	(0,38)	(0,42)	(0,39)	(0,39)	(0,41)	(0,41)	(0,38)
East Europe & Central Asia	-2,11***	-0,81**	-0,57	-1,29***	-0,68*	-0,69	-1,60***	-1,31***
	(0,34)	(0,38)	(0,43)	(0,34)	(0,41)	(0,42)	(0,36)	(0,34)
Latin America & the Caribbean	-1,15***	-0,08	0,23	-0,63**	0,14	0,18	-0,70**	-0,77***
	(0,32)	(0,33)	(0,39)	(0,30)	(0,36)	(0,39)	(0,32)	(0,29)
Middle East & **North Africa**	-2,71***	-1,36***	-1,43***	-1,55***	-1,56***	-1,40***	-1,99***	-1,76***
	(0,44)	(0,40)	(0,43)	(0,39)	(0,41)	(0,43)	(0,47)	(0,33)
South Asia	-4,66***	-3,04***	-2,95***	-3,67***	-3,18***	-2,93***	-3,67***	-3,62***
	(0,54)	(0,58)	(0,61)	(0,58)	(0,56)	(0,59)	(0,61)	(0,54)
Sub Saharan Africa	-3,29***	-1,73***	-1,65***	-2,12***	-1,68***	-1,70***	-2,52***	-2,39***
	(0,36)	(0,37)	(0,41)	(0,36)	(0,39)	(0,39)	(0,39)	(0,33)
North America	-0,13	-0,19	-0,23	-0,18	-0,24	-0,11	-0,20	-0,06
	(0,53)	(0,47)	(0,58)	(0,46)	(0,47)	(0,54)	(0,44)	(0,47)
R2 Adj	0,71	0,77	0,76	0,75	0,77	0,77	0,74	0,77
No. of obs	149	149	149	149	149	149	149	149

Note: ***significant at 1% level; ** significant at 5% level; *significant at 10% level. Values in parenthesis are Whites' robust standard errors. All the specifications passed the Ramsey Reset test with 1, 2 and 3 powers.

Table 5b: Effect on FDI per capita of an improvement of 1 standard deviation

	Average Governance	Corruption	Voice	Rule of Law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
Coefficient	1,06	0,89	0,74	0,98	1,01	0,63	0,92
Strd. Dev.	0,87	0,97	0,93	0,94	0,94	0,91	0,87
Effect	2,50	2,36	1,98	2,52	2,58	1,78	2,22

4.3 Controlling for the level of development

A country's level of development has been shown to be positively associated with governance (Kaufman *et al* (1999b), Rodrik *et al* (2002) or Glaeser *et a*l (2004)). To check whether the regression results were driven by differences in governance between rich countries (which generally tend to attract more FDI) and poor countries (which tend to attract less), the same regressions as above were run for a sub-sample including only low- and middle-income countries defined as such by the World Bank's World Development Indicators. 25 high-income countries were excluded. The results are presented in Table 6a. Note that the regional dummies now take a value of 1 if the country belongs to a region other than Sub-Saharan Africa.

The slightly poorer fit of the model can be explained by the smaller variations in variables (the standard deviations are smaller than those of the full sample for all variables in the sub-sample, except for inflation). The incidence and significance of the control variables are similar to those of the full-sample regression. The regional dummies show that holding governance, macroeconomic stability and market size constant, South Asia is the only region where countries attract systematically less FDI per capita than in Sub-Saharan Africa.

Again, Average Governance is strongly and positively associated with FDI, although the coefficient is somewhat smaller than in the full sample. Also as in the full-sample regression, all the 6 dimensions of governance are positively related to FDI inflows. An improvement in the overall governance situation of one standard deviation (corresponding to an improvement from the position of Zimbawe to the level of Nicaragua, or from Tunisia to the Czech Republic) is associated with an increase in FDI per capita of 1,7 times (see table 6b).

In conclusion, the results are robust to the exclusion of high-income countries from the sample.

Table 6a: Cross-country analysis for low- and middle-income countries

Dependent: log FDI per capita		Average Governance	Corruption	Voice and Accountability	Rule of law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
log GDP	0,26***	0,20***	0,21***	0,26***	0,19***	0,16***	0,26***	0,17***
	(0,06)	(0,06)	(0,07)	(0,06)	(0,06)	(0,07)	(0,06)	(0,07)
log Openness	1,96***	1,59***	1,70***	1,79***	1,57***	1,66***	1,63***	1,68***
	(0,32)	(0,41)	(0,41)	(0,36)	(0,42)	(0,42)	(0,35)	(0,38)
log Inflation	-0,29***	-0,11	-0,17	-0,18	-0,13	-0,12	-0,17	-0,11
	(0,10)	(0,10)	(0,11)	(0,10)	(0,10)	(0,11)	(0,10)	(0,10(
Governance		0,85***	0,70**	0,55***	0,81***	0,76***	0,51***	0,69***
		(0,24)	(0,27)	(0,15)	(0,23)	(0,27)	(0,17)	(0,19)
East Asia & Pacific	0,16	0,11	0,22	0,03	0,15	0,09	0,02	0,30
	(0,34)	(0,34)	(0,36)	(0,33)	(0,34)	(0,34)	(0,32)	(0,37)
East Europe &Central Asia	1,11***	0,95***	1,08***	0,87***	1,02***	1,03***	0,93***	1,07***
	(0,33)	(0,33)	(0,34)	(0,33)	(0,34)	(0,33)	(0,34)	(0,34)
Latin America & the Caribbean	2,14***	1,74***	1,93***	1,65***	1,88***	1,94***	1,88***	1,76***
	(0,30)	(0,28)	(0,28)	(0,29)	(0,27)	(0,28)	(0,29)	(0,30)
Middle East & North Africa	0,11	0,21	0,07	0,35	-0,03	0,10	0,18	0,39
	(0,45)	(0,43)	(0,43)	(0,45)	(0,42)	(0,43)	(0,48)	(0,38)
South Asia	-1,28**	-1,28**	-1,27**	-1,46**	-1,43***	-1,20**	-1,13**	-1,19**
	(0,56)	(0,55)	(0,56)	(0,57)	(0,53)	(0,53)	(0,57)	(0,55)
R2 Adj	0,62	0,67	0,65	0,66	0,67	0,66	0,65	0,66
No. of obs	124	124	124	124	124	124	124	124

Note: ***significant at 1% level; ** significant at 5% level; *significant at 10% level. Values in parenthesis are Whites' robust standard errors. All the specifications passed the Ramsey Reset test with 1, 2 and 3 powers.

Table 6b: Effect on FDI per capita of an improvement of 1 standard deviation

	Average Governance	Corruption	Voice	Rule of Law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
Coefficient	0,85	0,70	0,55	0,81	0,76	0,51	0,69
Strd. Dev.	0,60	0,55	0,79	0,61	0,60	0,82	0,69
Effect	1,67	1,47	1,54	1,64	1,58	1,52	1,61

4.4 Controlling for measurement error

The KKZ governance indicators have been estimated from a model that expresses the observed data as a linear function of unobserved governance plus a disturbance term capturing perception errors and/or sampling variation in each indicator. This method gives the KKZ indicators a major advantage over other measures of governance: all governance indicators are subject to measurement error, but the method of KKZ allows for a quantification of these errors. For each point estimate of governance, the KKZ data provides the standard error, which can be interpreted as a measure of how informative each estimate is of the broader concept of governance it tries to capture. I followed the method employed by Globerman and Shapiro (2002) to use that information[13]. For each observation, I took the ratio of the standard error to the estimate and calculated the average of this ratio for each indicator and country over the 5 periods for which data is available. Then I constructed a dummy variable for each indicator, which takes the value of 1 when the average ratio for a country is equal or greater than 1, and 0 otherwise. The dummy for the Average Governance indicator takes a value of 1 when any of the other 6 dummies does so. Then I estimated the same equation as in table 5a for each indicator and included the dummy variable corresponding to the governance indicator being considered. The results are presented in table 7a and 7b. The inclusion of the dummies did not alter the results, which are virtually identical to those presented in table 5a and 5b (in order to save space, I do not report the coefficients of the regional dummies). Hence, the presence of measurement errors in the governance variable should not be a major source of bias of the results.

[13] Globerman and Shapiro (2002) use the measurement errors in more or less the same way, but employs the less strict threshold of standard error/governance estimate >2 for their dummy to take the value of 1.

Table 7a: Cross-Country analysis 1996-2004, including dummies for large measurement errors

Dependent: Log FDI per capita	Average Governance	Corruption	Voice and Accountability	Rule of law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
log GDP	0,17***	0,21***	0,26***	0,17***	0,13***	0,26***	0,14***
	(0,05)	(0,06)	(0,05)	(0,06)	(0,07)	(0,05)	(0,06)
Log Openness	1,48***	1,53***	1,64***	1,45***	1,51***	1,30***	1,50***
	(0,34)	(0,36)	(0,32)	(0,36)	(0,37)	(0,28)	(0,34)
Log Inflation	-0,08	-0,13	-0,14	-0,07	-0,08	-0,14	-0,07
	(0,10)	(0,10)	(0,10)	(0,10)	(0,10)	(0,11)	(0,11)
Governance	1,05***	0,87***	0,75***	1,00***	1,02***	0,67***	0,92***
	(0,18)	(0,18)	(0,13)	(0,17)	(0,21)	(0,15)	(0,17)
Dummy measurement error	-0,36	0,29	-0,55**	-0,23	-0,13	-0,47	-0,07
	(0,23)	(0,21)	(0,23)	(0,25)	(0,19)	(0,21)	(0,22)
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2 Adj	0,78	0,76	0,77	0,77	0,77	0,75	0,76
No. of obs	149	149	149	149	149	149	149

Note: ***significant at 1% level; ** significant at 5% level; *significant at 10% level. Values in parenthesis are Whites' robust standard errors. All the specifications passed the Ramsey Reset test with 1, 2 and 3 powers.

Table 7b: Effect on FDI per capita of an improvement of 1 standard deviation

	Average Governance	Corruption	Voice	Rule of Law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
Coefficient	1,05	0,87	0,75	1,00	1,02	0,67	0,92
Strd. Dev.	0,87	0,97	0,94	0,93	0,94	0,90	0,87
Effect	2,49	2,32	2,02	2,56	2,60	1,82	2,22

4.5 Alternative control variables

Hitherto, I have assumed that all the explanatory variables are exogenous. In the case of the governance indicators and the inflation rate, this assumption seems realistic. Although one could think of situations where multinational firms affect the governance situation of a country, changes in governance tend to be very sluggish and the time period we consider here is short. As for inflation, FDI constitutes a relatively narrow capital flow item and is unlikely to have large simultaneous macroeconomic effects (Garibaldi *et al*, 2001). GDP and trade as a percentage of GDP may, however, cause problems, since FDI may spur growth rates and because multinational firms are engaged in trading activities. Therefore, I run a series of regressions where these variables have been substituted for two alternative control variables to see if this alters the results. Openness is proxied by dummy that takes the value of 1 if the country is considered to have been open 1990-1999 and 0 if it is considered to have been closed during that period. A country is classified as closed if it displays at least one of the following characteristics: (1) average tariff rates of 40% of more; (2) non-tariff barriers covering 40% or more of trade; (3); a black market exchange rate that is depreciated by 20% or more relative to the official exchange rate, on average, during the 1970s or 1980s; (4) a state monopoly on major exports; and (5) a socialist economic system.[14] GDP is proxied by the fitted value from an auxiliary regression in which the log of GDP was regressed on the log of population. Because population was used as an instrument, FDI will not be scaled down by population in the following regression in order to avoid problems with interpreting the coefficients. Due to the limited availability of data on the openness dummy the sample had to be reduced to 125 countries. The results are presented in table 8a.

As in the previous regressions, the market size variable is positive and significant, while inflation is insignificant. Interestingly, the openness dummy is positive and significant only when governance indicators are not present, as opposed to the openness variable used in previous specifications. A plausible explanation for this

[14] This variable was constructed by Wacziarg and Welch (2003), as on up date of the widely used Warner and Sachs index.

is that the openness dummy reflects trade *policy* more accurately than trade as a share of GDP, which is more of a trade policy *outcome*. This in turn results in a higher correlation between the governance indicators and the openness dummy (see table A in the Appendix). The regional dummies are not very different to those of table 4a.

As for the effect of Average Governance on FDI, as well as that of the 6 governance indicators, the change in control variables did not alter the result to beyond what could be expected due to the change in the sample. They are all positive and highly significant and the effect of a one standard deviation is still important (see table 8b).

Table 8a: Cross-country analysis with alternative control variables

Dependent: log FDI		Average Governance	Corruption	Voice and Accountability	Rule of law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
log GDP fitted	0,85*** (0,08)	0,97*** (0,07)	0,97*** (0,07)	0,94*** (0,08)	0,97*** (0,07)	0,92*** (0,07)	0,95*** (0,08)	0,90*** (0,07)
Openness Dummy	0,90*** (0,33)	0,18 (0,27)	0,40 (0,29)	0,36 (0,31)	0,32 (0,27)	0,19 (0,28)	0,58 (0,30)	-0,03 (0,28)
log Inflation	-0,22 (0,17)	-0,02 (0,17)	-0,07 (0,16)	-0,16 (0,18)	-0,03 (0,16)	0,00 (0,17)	-0,09 (0,18)	0,06 (0,17)
Governance		1,36*** (0,17)	1,14*** (0,16)	0,85*** (0,16)	1,28*** (0,15)	1,36*** (0,18)	0,75*** (0,17)	1,32*** (0,18)
East Asia and Pacific	-1,77*** (0,42)	1,36*** (0,17)	-0,48 (0,42)	-1,03** (0,44)	-0,64* (0,37)	-0,55 (0,38)	-1,32*** (0,38)	-1,01*** (0,37)
East Europe & Central Asia	-2,19*** (0,48)	-0,65* (0,38)	-0,07 (0,51)	-1,21** (0,48)	-0,17 (0,49)	-0,09 (0,46)	-1,63*** (0,50)	-1,00** (0,42)
Latin America & the Caribbean	-2,30*** (0,39)	-0,43 (0,46)	-0,10 (0,50)	-1,42*** (0,40)	-0,07 (0,45)	0,02 (0,47)	-1,51*** (0,43)	-1,31*** (0,36)
Middle East & North Africa	-2,92*** (0,46)	-0,44 (0,42)	-1,28*** (0,45)	-1,71*** (0,45)	-1,37*** (0,42)	-1,15** (0,45)	-2,11*** (0,50)	-1,57*** (0,36)
South Asia	-4,81*** (0,64)	-1,23*** (0,43)	-2,93*** (0,68)	-4,01*** (0,69)	-3,12*** (0,62)	-2,76*** (0,63)	-3,78*** (0,71)	-3,73*** (0,61)
Sub Saharan Africa	-4,36*** (0,38)	-3,08*** (0,66)	-2,00*** (0,50)	-3,05*** (0,41)	-1,91*** (0,44)	-1,79*** (0,44)	-3,40*** (0,42)	-2,73*** (0,39)
North America	-0,06 (0,27)	-2,11 (0,42)	-0,49* (0,27)	-0,21 (0,26)	-0,46* (0,25)	-0,39 (0,24)	-0,14 (0,26)	-0,26 (0,24)
R2 Adj	0,73	0,80	0,79	0,77	0,80	0,81	0,76	0,81
No. of obs	125	125	125	125	125	125	125	125

Note: ***significant at 1% level; ** significant at 5% level; *significant at 10% level. Values in parenthesis are Whites' robust standard errors. All the specifications passed the Ramsey Reset test with 1, 2 and 3 powers.

Table 8b: Effect on FDI of an improvement of 1 standard deviation

	Average Governance	Corruption	Voice and Account-ability	Rule of Law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
Coefficient	1,36	1,14	0,85	1,28	1,36	0,75	1,32
Strd. Dev.	0,90	1,01	0,93	0,97	0,98	0,90	0,89
Effect	3,41	3,19	2,19	3,49	3,81	1,97	3,26

4.6 Analysis of different time periods

Although the governance variables change very slowly over time, the other variables in the model, particularly FDI per capita and inflation, may change significantly over the period for which the averages are calculated. For example, the inflation rate of Zaire averaged 17,9 percent during the period 1995-97 and 386,2 percent during the period 1999-01. Averaging for the 1996-2003 gives an inflation rate of 276,7%, which does not accurately reflect the deterioration of Zaire's macroeconomic environment. In order to check whether this problem affected the results, I ran the same regressions as above for two different time periods, the earliest and the latest allowed by the governance data. The governance indicators for 1996 were matched with averages for 1995-1997 of the other variables and the governance indicators for 2002 were matched with averages for 2001-2003 of the other variables. Because of the fluctuation of FDI per capita (particularly for small countries for which a single large investment project may dominate FDI inflows in a given year) it would be misleading to use data for an individual year. Due to differences in data availability for the two periods a large number of observations had to be excluded in order for the sample to include exactly the same countries in the two periods (108 countries). Since the data now concerns shorter time periods, it becomes meaningful to lag the control variables.[15] This mitigates the risk of possible endogeneity due to reversed causality biasing the results. Furthermore, it is plausible that FDI takes some time to adjust to changes in openness, market size and the macroeconomic environment. The regression results are presented in table 9a and 10a.

A striking discrepancy between the results for the two different time periods is that lagged GDP is significant only for 1995-1997.[16] There is no good explanation for this other than that importance of market size as a location advantage may be on decline. However, given the narrow time span between the two periods, this result should not be taken too far.

[15] The governance indicators for 1996 are the earliest ones available and therefore cannot be lagged. This is not any serious constraint , since they change slowly over time.
[16] This result is not due to the introduction of a lag. Regressions with contemporenous GDP gave very similar results.

Average Governance, as well as the six governance indicators are positive and highly significant in both periods and there are no important differences in their incidence. As can be seen in table 9b and 10b, the effect of governance is very important in both periods. An one standard deviation improvement in the overall governance situation is associated with an increase of FDI per capita inflows by a factor of 3,6 for the earlier time period and 3,25 for the later.

Table 9a: Cross-country analysis 1995-1997

Dependent: log FDI per capita		Average Governance	Corruption	Voice and Accountability	Rule of law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
log GDP (-1)	0,38***	0,27***	0,31***	0,29***	0,23**	0,24***	0,42***	0,23**
	(0,09)	(0,09)	(0,08)	(0,09)	(0,09)	(0,08)	(0,09)	(0,09)
log Openness (-1)	1,37***	1,06***	1,24***	1,14***	0,91***	1,19***	1,24***	1,16***
	(0,29)	(0,25)	(0,25)	(0,27)	(0,25)	(0,22)	(0,32)	(0,23)
log Inflation (-1)	-0,23**	0,07	-0,01	-0,02	0,02	0,06	-0,16	0,10
	(0,10)	(0,11)	(0,10	(0,11)	(0,11)	(0,09)	(0,10)	(0,10)
Governance		1,46***	1,08***	0,93***	1,22***	1,46***	0,54***	1,16***
		(0,19)	(0,17)	(0,17)	(0,19)	(0,16)	(0,15)	(0,23)
East Asia & Pacific	-1,51***	-0,11	-0,26	-0,50	-0,12	-0,06	-1,10**	-0,80*
	(0,52)	(0,37)	(0,40)	(0,48)	(0,40)	(0,30)	(0,50)	(0,46)
East Europe &Central Asia	-1,13**	0,03	0,05	-0,57	0,22	0,52	-0,77	-0,94*
	(0,52)	(0,50)	(0,52)	(0,48)	(0,53)	(0,44)	(0,55)	(0,52)
Latin America & the Caribbean	-0,71*	0,84**	0,82*	-0,05	0,90**	1,54***	-0,05	-0,53
	(0,39)	(0,41)	(0,42)	(0,38)	(0,43)	(0,42)	(0,43)	(0,44)
Middle East & North Africa	-2,14***	-0,49	-0,93**	-0,99**	-0,78*	-0,32	-1,41**	-1,27***
	(0,61)	(0,41)	(0,45)	(0,45)	(0,43)	(0,44)	(0,64)	(0,42)
South Asia	-3,99***	-1,70***	-2,06***	-2,80***	-2,14***	-1,25**	-2,96***	-2,74***
	(0,54)	(0,64)	(0,64)	(0,66)	(0,54)	(0,57)	(0,67)	(0,59)
Sub Saharan Africa	-2,66***	-0,66	-1,03**	-1,54***	-0,72	-0,20	-1,81***	-1,87***
	(0,47)	(0,50)	(0,50)	(0,48)	(0,54)	(0,49)	(0,50)	(0,56)
North America	-0,43	-0,33	-0,52	-0,27	-0,31	-0,29	-0,46	-0,21
	(0,38)	(0,28)	(0,45)	(0,31)	(0,30)	(0,27)	(0,32)	(0,29)
R2 Adj	0,64	0,77	0,75	0,73	0,76	0,78	0,67	0,75
No. of obs	108	108	108	108	108	108	108	108

Note: ***significant at 1% level; ** significant at 5% level; *significant at 10% level. Values in parenthesis are Whites' robust standard errors. All the specifications passed the Ramsey Reset test with 1, 2 and 3 powers.

Table 9b: Effect on FDI per capita of an improvement of 1 standard deviation

	Average Governance	Corruption	Voice and Accountability	Rule of Law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
Coefficient	1,46	1,08	0,93	1,22	1,46	0,54	1,16
Strd. Dev.	0,88	1,00	0,93	1,02	1,00	0,90	0,88
Effect	3,58	2,94	2,38	3,46	4,29	1,64	2,77

Table 10a: Cross-country analysis 2001-2003

Dependent: log FDI per capita		Average Governance	Corruption	Voice and Accountability	Rule of law	Government Effectiveness	Political Stability and Violence	Regulatory Quality
log GDP (-1)	0,06 0,06)	0,01 (0,05)	0,03 (0,05)	0,01 (0,05)	0,02 (0,05)	-0,01 (0,05)	0,05 (0,06)	0,01 (0,05)
log Openness (-1)	1,32*** (0,33)	0,86*** (0,28)	1,04*** (0,29)	0,95*** (0,29)	0,90*** (0,29)	0,88*** (0,26)	1,01*** (0,36)	0,89*** (0,25)
log Inflation (-1)	-0,16 (0,15)	0,05 (0,13)	0,00 (0,14)	0,02 (0,13)	0,02 (0,14)	0,06 (0,13)	-0,10 (0,15)	0,13 (0,12)
Governance		1,27*** (0,17)	1,06*** (0,16)	0,99*** (0,16)	1,17*** (0,17)	1,38*** (0,16)	0,58*** (0,20)	1,27*** (0,15)
East Asia & Pacific	-3,18*** (0,58)	-1,53*** (0,41)	-1,44*** (0,44)	-1,80*** (0,47)	-1,59*** (0,42)	-1,33*** (0,37)	-2,69*** (0,55)	-1,59*** (0,39)
East Europe & Central Asia	-2,27*** (0,34)	-0,43 (0,43)	-0,21*** (0,46)	-1,09 (0,37)	-0,34 (0,47)	0,14 (0,42)	-1,73*** (0,42)	-0,71** (0,38)
Latin America & the Caribbean	-2,21*** (0,36)	-0,29 (0,40)	-0,11 (0,44)	-1,20*** (0,34)	-0,09 (0,45)	0,46 (0,40)	-1,56*** (0,39)	-0,68** (0,32)
Middle East & North Africa	-2,77*** (0,48)	-0,97** (0,44)	-1,12** (0,46)	-1,25*** (0,43)	-1,25*** (0,45)	-0,73* (0,42)	-2,00*** (0,51)	-1,08*** (0,36)
South Asia	-5,38*** (0,91)	-3,14*** (0,82)	-3,17*** (0,95)	-3,95*** (0,82)	-3,47*** (0,83)	-2,84*** (0,80)	-4,27*** (0,89)	-3,22*** (0,82)
Sub Saharan Africa	-4,50*** (0,36)	-2,10*** (0,48)	-2,14*** (0,54)	-2,82*** (0,43)	-2,11*** (0,51)	-1,43*** (0,48)	-3,69*** (0,43)	-2,25*** (0,42)
North America	0,11 (0,45)	-0,14 (0,41)	-0,16 (0,45)	-0,16 (0,38)	-0,25 (0,37)	-0,30 (0,42)	0,23 (0,49)	-0,23 (0,35)
R2 Adj	0,64	0,77	0,74	0,74	0,76	0,79	0,68	0,78
No,of obs	108	108	108	108	108	108	108	108

Note: ***significant at 1% level; ** significant at 5% level; *significant at 10% level. Values in parenthesis are Whites' robust standard errors. All the specifications passed the Ramsey Reset test with 1, 2 and 3 powers.

Table 10b: Effect on FDI per capita of an improvement of 1 standard deviation

	Average Governance	Corruption	Voice	Rule of Law	Government Effectiveness	Political Stability	Regulatory Quality
Coefficient	1,27	1,06	0,99	1,17	1,38	0,58	1,27
Strd. Dev.	0,93	1,05	0,95	0,99	1,03	0,93	0,94
Effect	3,25	3,05	2,55	3,20	4,12	1,72	3,30

5. Conclusions, policy implications and avenues for future research

This paper has assessed the effect of the overall level of governance as well as of six different governance dimensions on FDI inflows for a broad set of countries during the last decade. The conclusion is clear: governance matters to FDI. Countries with good governance attract more FDI than countries with weak governance, given market size, macroeconomic stability, openness to trade and regional idiosyncrasies. This holds for different samples, over different time periods and is robust to the change of control variables. Furthermore, the return to governance improvements in terms of increased FDI inflows is large.

An important finding of this paper is that governance matters to FDI *irrespective of which governance dimension one looks at*. The process by which governments are selected, monitored and replaced; the capacity of governments to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions are all important determinants of the business-environment in which multinational firms produce, trade and carry out transactions.

The message of this study to countries eager to attract FDI is clear: Behave and be attractive! For governments participating in the global race for FDI, the strong link between governance and FDI inflows found in this paper is both encouraging and discouraging at the same time. The result is encouraging because it means that countries can increase their FDI inflows by improving institutions and polices. This is good news for countries with relatively scarce resources, since measures geared towards increasing transparency or enhancing the government's accountability to its citizens do not require large financial investments. However, this is bad news for governments looking for "easy shortcuts" to attract foreign direct investors. Governance reforms are certainly no "easy shortcut"; they require political will and their outcome is bound to be determined the intricate interplay between the government, the private sector and the civil society. Furthermore, the linkages between different dimensions of governance are indisputably complex.

For example, a democratic political process may very well be an important prerequisite for fighting corruption, while improving government effectiveness may require a minimum level of rule of law.

This paper shows that investigations of the links between governance and FDI should form part of the broader research agenda for the study of the relationship between governance and economic growth. The fine-tuning of econometric research, by continuing collecting high-quality governance data and combining it with disaggregated FDI statistics (e.g. plant-level data), may provide additional insights on how specific governance dimensions affect multinational firms' investment behavior. Econometric research should be combined with case studies that examine how policies and institutions affect foreign direct investors in specific country settings.

The recommendation to "behave and be attractive" very much echoes the policy debate that is currently being conducted by multilateral institutions, investment promotion experts and donor agencies.[17] In order to convert this recommendation into practical policy advice, economists and other social scientists must continue their efforts to investigate how "good governance" can be achieved in practice. The questions that need to be answered are indeed complicated: How are different governance dimensions linked to each other? What is the role of the state, the private sector and the civil society in devising policies and institutions conducive to growth and investment? How should institutional reforms be sequenced in order to achieve maximum positive impact on the business climate?

At the end of the day, however, policy makers are the ones that must seriously consider how governance issues are related to FDI. Only then can the competition for FDI turn into a real beauty contest.

[17] See for example OECD, 2002

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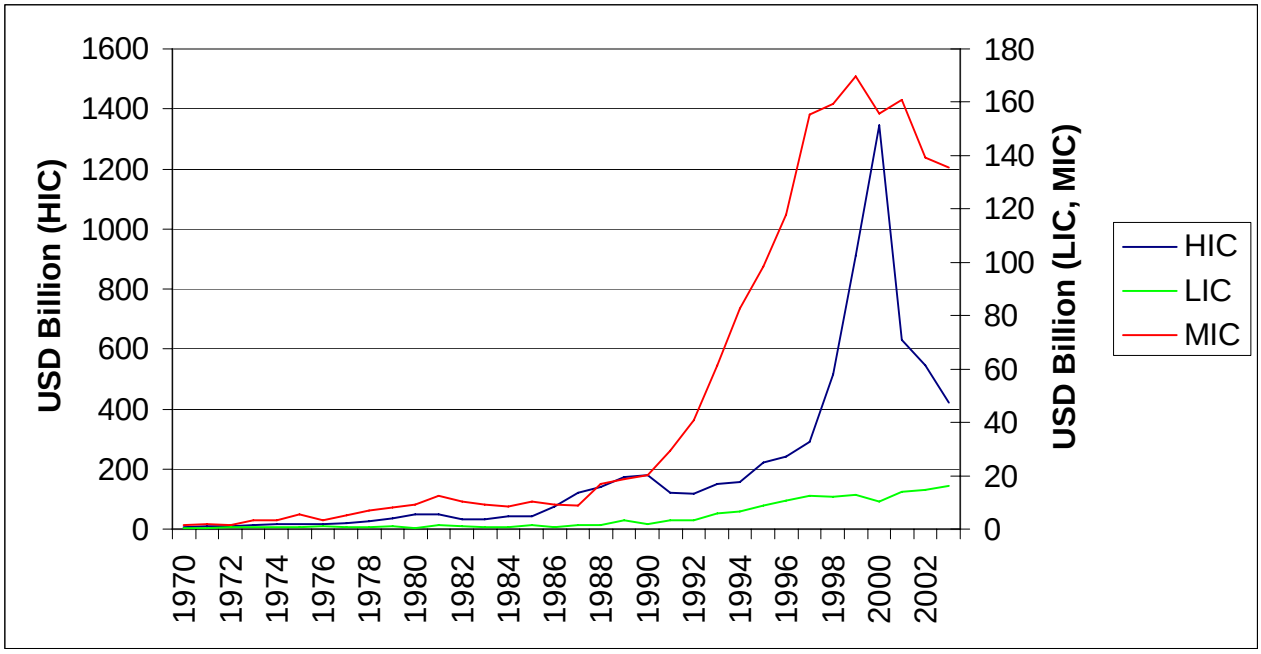
Annex

Chart A : FDI inflows to high-, middle- and low-income countries 1970-2003



Source: Word Development Indicators Database, World Bank
Note: High Income Countries inflows are measured on the primary y-axis and those of Low Income Countries and Middle Income Countries are measured on the secondary y-axis.

Table A: Correlation Matrix for averages 1996-2004

	Voice and Accountability	Political Stability	Government Effectiveness	Regulatroy Quality	Corruption	Rule of Law	GDP	Inflation	Trade % of GDP	Growth	Population	Openness Dummy
Voice and Accountability	1											
Political Stability	0,82	1										
Government Effectiveness	0,87	0,83	1									
Regulatroy Quality	0,90	0,79	0,91	1								
Corruption	0,85	0,81	0,97	0,87	1							
Rule of Law	0,88	0,85	0,98	0,90	0,98	1						
GDP	0,18	0,17	0,29	0,22	0,26	0,28	1					
Inflation	-0,26	-0,29	-0,28	-0,35	-0,23	-0,27	-0,06	1				
Trade % of GDP	0,12	0,25	0,11	0,11	0,09	0,12	-0,26	0,15	1			
Growth	-0,14	0,04	-0,03	-0,08	-0,07	-0,06	0,01	0,06	0,13	1		
Population	-0,09	-0,06	0,02	-0,04	-0,03	-0,01	0,59	-0,03	-0,23	0,18	1	
Openness Dummy	0,53	0,47	0,49	0,60	0,46	0,46	0,03	-0,24	0,09	-0,03	-0,20	1

Table B: Descriptive statistics for the cross-country analysis 1996-2004

	Mean	Median	Maximum	Minimum	Std, Dev,
Voice	0,01	-0,08	1,61	-1,73	0,93
Polictial Stability and Violence	0,00	-0,01	1,62	-2,39	0,91
Governance Effectiveness	-0,02	-0,24	2,33	-1,77	0,94
Regulatory Quality	0,03	-0,03	1,77	-2,28	0,87
Corruption	-0,04	-0,35	2,46	-1,59	0,97
Rule of Law	-0,04	-0,30	2,14	-1,84	0,94
FDI	4,72	0,23	158,00	-0,27	16,00
FDI per capita	253,86	44,99	6745,09	-58,68	708,91
GDP	270,00	28,60	9360,00	0,39	924,00
Inflation %	17,28	4,88	675,56	-11,66	60,81
Trade % of GDP	82,45	75,72	279,26	20,13	41,57
GDP Growth	3,67	3,50	24,87	-2,05	3,02
Population	36930314	8012000	1260000000	43478	132000000
Trade % of current revenue	13,26	9,72	49,01	-0,01	12,61

Note: FDI and GDP are denominated in USD Billion

Table C: Country Sample

Sub-Saharan Africa	Latin America and Caribbean	East Europe and Central Asia	East Asia and Pacific	Western Europe	Middle East and North Africa
Angola	Argentina	Albania	Australia (HIC)	Austria (HIC)	Algeria
Benin	Barbados	Armenia	Cambodia	Beligum (HIC)	Egypt
Botswana	Belize	Azerbajan	China	Cyprus (HIC)	Iran
Burkina Faso	Bolivia	Belarus	Fiji	Denmark (HIC)	Israel (HIC)
Burundi	Brazil	Bosnia-Herzegovina	Hong Kong (HIC)	Finland (HIC)	Jordan
Cameroon	Chile	Bulgaria	Indonesia	France (HIC)	Kuwait (HIC)
Cape Verde	Colombia	Croatia	Japan (HIC)	Germany (HIC)	Lebanon
Central Africa	Costa Rica	Czech Republic	Korea, South	Greece (HIC)	Morocco
Chad	Dominica	Estonia	Laos	Iceland (HIC)	Oman
Commoros	Dominican Rebublic	Georgia	Malaysia	Ireland (HIC)	Syria
Congo	Ecuador	Hungary	Mongolia	Italy (HIC)	Tunisia
Congo, Dem. Rep. (Zaire)	El Salvador	Kazakhstan	New Zeeland	Netherlands (HIC)	Yemen
Côte d'ivoir	Grenada	Kyrgyz Republic	Papau New Guinea	Norway (HIC)	
Djibuti	Guatemala	atvia	Phillipines	Portugal (HIC)	
Equatorial Guinea	Guyana	Lithuania	Samoa	Spain (HIC)	
Eritrea	Haiti	Macedonia	Solomon Islands	Sweden (HIC)	
Ethiopia	Honduras	Moldova	Thailand	Switzerland (HIC)	
Gabon	Jamaica	Poland	Tonga	United Kingdom (HIC)	
Gambia	Mexico	Romania	Vanatu		
Ghana	Nicaragua	Russia	Vietnam	**North America**	
Guinea	Panama	Serbia and Montenegro		Canada (HIC)	
Guinea Bissau	Paraguay	Slovak Republic	**South Asia**	United States (HIC)	
Kenya	Peru	Slovenia (HIC)	India		
Lestotho	St Knitts and Nevis	Tajikistan	Nepal		
Madagascar	St Lucia	Turkey	Pakistan Sri Lanka		
Malawi	St Vincent and the Grenadines	Turkmenistan			
Mali	Trinidad and Tobago	Ukraine			
Mauretania	Uruguay	Uzbekistan			
Mauritius	Venezuela				
Mozambique					
Niger					
Nigeria					
Rwanda					
Senegal					
Sierra Leone					
South Africa					
Sudan					
Swaziland					
Tanzania					
Togo					
Uganda					
Zambia					
Zimbawe					

Note: High-income countries are denominated "(HIC)"

Table D: Variables, definitions and sources of data

Variable	Definition	Source
FDI inflows, net	Net sum of equity capital, reinvested earnings and the provision of long- and short-term intra-company loans from an investor that holds at least 10 percent of the foreign affiliate's equity stake	World Development Indcators (WDI), World Bank
GDP	GDP adjusted for Purchasing Power Parity	WDI, World Bank
GDP growth	Annual change in GDP	WDI, World Bank
Trade as a share of GDP	Imports+exports/GDP*100	WDI, World Bank
Openess Dummy	Cassifies a country as closed if it displays at least one of the following characteristics: (1) average tariff rates of 40% of more; (2) non-tariff barriers covering 40% or more of trade; (3); a black market exchange rate that is depreciated by 20% or more relative to the official exchange rate, on average, during the 1970s or 1980s; (4) a state monopoly on major exports; and (5) a socialist economic system.	Wacziarg and Welch (2003)
Inflation	Annual change in the Consumer Price Index	WDI, World Bank and Economic Outlook Database, International Monetary Fond
Population		WDI, World Bank
Average Governance	Unweighted average of the six KKZ indicators	KKZ
Voice and Accountability	The government's accountability to citizens through democratic institutions and free press	KKZ
Corruption	The exercise of public power for private gain	KKZ
Rule of law	The quality of contract enforcement, the police and the courts, as well as the likelihood of crime and violence	KKZ
Political stability and Violence	The likelihood of violent threats to, or changes in, government	KKZ
Regulatory Quality	The incidence of market-unfriendly policies	KKZ
Government Effectiveness	The competence of the bureaucracy and the quality of public service	KKZ