Governance and FDI attractiveness: Some evidence from developing and developed countries

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ABSTRACT: In this paper, we'll try to study the impact of governance indicators and macroeconomic variables on the attractiveness of foreign direct investment in 20 developed and developing countries over the period 1998–2011 using fixed effects panel regressions. Our results generally indicate that only two indicators of governance namely, political stability and regulatory quality have a significant impact on FDI inflows. This indicates, for our overall sample, that foreign investors are interested in political stability and regulatory quality in their choice of investment abroad. This paper also investigates the impact of macroeconomic variables on the attractiveness of FDI. Generally, in most models, either developed or developing countries, these variables provide a significant sign, which indicates the importance of these factors in the attraction of FDI. Indeed, market size, trade openness, infrastructure quality, the current account deficit have a significant effect on FDI inflows.

1. Introduction

Globalization has led to an increase in foreign direct investment and transition countries become more attractive to FDI through the adoption of the liberalization of their regimes. Foreign

direct investment plays an important role in the development and in poverty reduction. They have several positive effects on employment, transfer of technology, and consequently on the development and economic growth of the host country. In this sense, the origin of foreign investment, its destination and its effects on the country issuers and receivers have been a topic of continuing interest.

In recent years, the international development debate and political discourse are interested in the concept of good governance, which became an important factor for the well functioning of countries market, and therefore, for the attractiveness of foreign investment. Indeed, governments seeking to attract FDI should create a more favourable climate for Multinational Enterprises. Indeed, governments seeking to attract FDI should create a more favourable climate for Multinational Enterprises through the improvement of political institutions and economic policies that stimulate FDI inflows. On the other hand, there are several factors such as corruption, political instability, macroeconomic instability that affect the investment climate.

Governance is an optimal alternative of governability, it depends on the interdependence of powers relating to collective action. This alternative is amplified, notably as a result of chess successive Bretton Woods's institutions. The World Bank was one of the first international institutions called for the contribution of non-governmental actors in the process of political decisions, economic and social, in particular within states borrowers to improve governance at national and local level. It has defined governance as a mode of power exercise in the management of social and economic resources of a country. Also, UNCTAD has defined governance as "the manner in which the main actors of the society, governments, businesses and civil society work together to make society better. "

Generally good institutions have a positive impact on development by encouraging investments. Therefore, the quality of institutions can attract FDI through good governance which constitutes an important factor for the attractiveness of foreign investment. The concept of good governance played a more

important role in the international development debate and scientific research. Also, transparency is a special element that has a great relationship with governance and foreign direct investment. The concept of lack of transparency is linked to the corruption which indicates the absence of good governance.

Indeed, multinational companies are always looking to invest where the institutional environment is favourable. In addition, foreign investors prefer to make their investments in host countries with a transparent institutional framework characterized by a coherent policy. Therefore, the objective of this study is to know the influence of governance indicators on FDI flows. So our problem is as follow: what is the impact of governance indicators and macroeconomic variables on the attractiveness of foreign direct investment?

The remainder of the paper is organized as follow: section 2 provides a review of the related literature. In section 3, we discuss the methodology and the econometric specification. The data and variables are reported in Section 4. Section 5 reports the empirical results of the estimation. The paper's concluding remarks are provided in Section 6.

2. Brief literature reviews

There are several studies that focus on the determinants of FDI in developing countries. The empirical study of Singh and Jun in 1995 that has been done on the influence of political risk and macroeconomic variables on FDI inflows in developing countries, confirms the significance of these factors in explaining the determinants of FDI. Singh and Jun 1995, use in their work the FDI as a percentage of GDP as the dependent variable, and political risk and macroeconomic variables (manufacturing exports and the fiscal system) as explanatory variables. Also, they used control variables. Both authors have done an econometric study with panel data set of 31 developing countries in the period 1970-1993.

Wang and Swain (1997) showed that political instability affects negatively FDI inflows of multinational companies and their

subsidiaries. Political instability, payment or modification of sovereign debt, corruption and non-transparent institutional harm the business climate, and therefore reduce FDI inflows.

Morisset (2000) in his study showed that corruption and bad governance, increase administrative costs and therefore reduce FDI inflows. And other works argue that political and institutional factors are necessary determinants of FDI movements to developing countries (Stein and Daude, 2001) and Latin America (Stevens, 2000).

Also, Globerman and shapiro in 2002, studied the relationship between governance and foreign direct investment in the United States. In general, governance infrastructure represents attributes of legislation, regulation and legal systems that affect the security of property rights, transparency of government and legal processes. Their result indicates that the governance infrastructure, including the nature of the legal system is an important determinant of received FDI. Globerman and shapiro in 2003 argue that good institutions establish a conducive climate to multinational companies abroad. The authors examine the impact of governance on FDI outflows from the United States destined for developing countries using a probit model.

According to Asiedu, in his article in 2005, data from several surveys of investors suggest that the investment restrictions, macroeconomic instability, corruption and political instability have a negative impact on foreign direct investment (FDI) in Africa. He uses panel data for 22 countries during the period 1984-2000 to analyze the influence of market, resources of nature, government policies, political instability and the quality of the institution in the host countries of FDI. Their fundamental result is that the major markets, natural resources, an educated population, a good infrastructure, less corruption, a political stability and a reliable legal system have a positive impact on FDI flows.

Bénassy-Quéré, Coupet and Mayer (2007) analyze the role of the institutional quality on the attractiveness of FDI in a sample of 52 countries in both countries investors and host countries. Using a database implemented by the French Ministry of Economy and

Finance, the authors attempt to study in detail the institutions. They establish a panel gravity model. The results of this study argue that host country institutions have an impact on FDI with or without the inclusion of GDP in the model. The results raise the role of the public sector in the fight against corruption, transparency, human contacts, the guarantee of security of property rights, effective justice and prudential supervision, in addition, to setting up an effective fiscal system.

The study by Mishra and Daly (2007) focuses on the effect of institutional quality of OECD and Asian host countries on FDI during the period 1991 – 2001 using the International Guide of country risk. They find that the best institutions in the host country have a positive and significant overall impact on FDI inflows. Indeed, the respect for the people's rights, the strength and justice of the legal system and government stability in host countries have a direct impact on FDI inflows in these countries.

Samimi and Ariani (2010) studied the impact of a better quality of governance on foreign direct investment. They used aggregate annual data for 16 countries in the Middle East and North Africa (MENA) for the period 2002-2007. They used three governance indicators namely, political stability, control of corruption and rule of law published by the World resources institute. They resulted in the improvement of governance and they have a positive impact on FDI inflows in MENA countries. Therefore, policies aimed at improving governance indicators in the region are proposed.

Adhikary (2011) studied the relationship between good governance, FDI and economic growth in 15 Asian countries over the period 1996 to 2008 with the application of the random effect of generalized least squares, estimation models Prais-Winsten. The empirical results show that FDI and governance indicators such as government effectiveness, political stability and absence of violence are determining factors of economic growth. Mengistu and Adhikary (2011), analyze the impact of six indicators of good governance on FDI inflows in 15 Asian countries for the period 1996-2007. They use a panel data model with fixed effects. They result that the six governance indicators namely, government

effectiveness, political stability and absence of violence, the rule of law and control of corruption are the main factors of FDI location. Generally, they conclude that improving the governance environment is able to attract more FDI.

Hassen and Anis (2012) studied the impact of foreign direct investment (FDI) on the economic growth of Tunisia, over the period 1975-2009. They found a relationship co-integration of long-term between the coefficients of financial development, FDI, human capital, trade openness and real GDP of the Tunisian economy.

3. Methodology

This paper uses the model of Baptiste (2005) to address the nature of the impact (positive or negative) of governance indicators on the attractiveness of foreign direct investment on a sample of 20 countries, 10 developed countries and 10 developing countries. We choose the control variables in our model according to data availability. Also, we add the variable subscribers to High Speed Internet fixed (per 100 people) as an indicator of infrastructure INFR. Thus, INFR is expected to be positively correlated with FDI. First, we will estimate our overall sample. After that, we divide the sample into two groups: The first group consists of 10 developed countries and the second contains 10 developing countries. And we will estimate for each group. Thus, the complete model is the following:

$$IDE\ (\%\ PIB)_{it} = \beta 0 + \beta 1\ STAB_{it} + \beta 2 QUAL_{it} + \beta 3\ CORR_{it} + \beta 4\ ETAT_{it} + \beta 5\ VRES_{it} + \beta 6\ EFI_{it} + \beta 7\ TINF_{it} + + \beta 8\ BCPIB_{it} + \beta 9\ CPIB_{it} + \beta 10\ TOU_{it} + \beta 11\ INT_{it} + \varepsilon_{it}$$

Where i is the country subscript, t is the time subscript, β0 is the constant, ε is an error term, βi are the coefficients associated with different variable, FDI (%GDP) is foreign direct

Investment inflows as a percentage of GDP, PSAV is the political stability and

the absence of violence, RQUAL is the regulatory quality, ETAT is the rule of law, VA is voice and accountability, CBRT is corruption and bureaucratic red tape, GEFF is government effectiveness, RINF is the inflation rate, BPCA is the balance of payments current account, GDPG is the GDP Growth Rate, OPEN is the openness of the economy and INFR is the infrastructure Index.

In our research we made the following operational assumptions that guide the remainder of the study. The first hypothesis assumes that the Political stability has a positive and significant impact on the attractiveness of FDI. The second hypothesis assumes that regulatory quality has a positive and significant effect on entered FDI. The third hypothesis assumes that the control of corruption affects positively and significantly the inflow of FDI. However, CBRT is expected to be negatively correlated with FDI flows. The fourth hypothesis assumes that voice and accountability, the rule of law and government effectiveness are positively related to FDI inflows. The fifth hypothesis assumes that the rate of GDP growth and the opening rate affect significantly and positively the inflow of FDI. The GDP growth rate is a variable that measures the size of the market, more the market size increases more the FDI share increases. Also, Morisset (2000) and Asiedu (2003) argue that the attraction of FDI depends on the degree of a country trade openness. Finally the sixth hypothesis assumes that the inflation has a negative impact on the FDI entry, the more the inflation is low the more FDI inflows are large (Trevino, Daniels and Arbeláez, 2002).

4. The Data and Variables

4.1 Data

This study data are taken from the World Bank website, the World Development Indicators and the site of Governance Matters 2011 (Worldwide Governance Indicators, (1996-2010). Our empirical investigation focuses on the study of the impact of the six governance indicators on inputs flows of foreign direct investment (FDI). Our sample is an unbalanced panel data of 20 developing and developed countries (namely the United States, Japan,

Germany, France, Italy, Canada, Greece, United Kingdom, Portugal, Netherlands, Algeria, Tunisia, Morocco, Egypt, Nigeria, Kenya, Indonesia, Malaysia, Albania and Cameron) over the period between 1998 and 2010 consisting of 260 observations.

4. 2 Variables description

To test the magnitude of the impact of the six governance indicators on the inputs of foreign investment flows, we used some variables that will be presented in detail as follows:

The dependent variable in our model is the FDI inflows as a percentage of GDP. This variable is measured by the ratio between foreign direct investment and GDP.

The independent variables are the six governance indicators, namely the fight against is corruption and bureaucratic red tape (CBRT), the rule of law (ETAT), political stability and the absence of violence (PSAV), voice and accountability (VA), regulatory quality (RQUAL) and government effectiveness (GEFF).

The control variables are related to five categories of factors: the inflation rate (RINF), balance of payments current account (% of GDP) (BPCA), GDP growth (GDPG), openness of the economy (OPEN) and infrastructure Index (INFR).

The inflation rate is measured by consumer prices (annual %). This variable is assumed closely related to an inadequate form of macroeconomic policy. The balance of payments current account is the total net exports of goods, services, net income and net current transfers. The openness of the economy is estimated by the trade intensity measured by the ratio of the sum of exports and imports to GDP. This ratio is often interpreted as the quantification of trade restrictions. In general, the impact of trade openness is related to the type of foreign investment. Indeed, the existence of many trade restrictions promotes the entry of horizontal FDI. While, the multinationals engaged in export activities or vertical FDI, prefer to invest in relatively open economies because trade barriers increase the transaction costs. Finally, the effect of infrastructure on the attractiveness of FDI can be explained by

adequate services that provide a favorable environment for the entry of foreign investment.

5 Empirical results

In order to measure the impact of governance indicators on the FDI entry, we used several tests. In the following, we present in detail the results. At first, we present descriptive statistics for the overall model, which contains 20 developed and developing countries.

5.1 The global model

5. 1. 1 Descriptive statistics

To estimate the models, we used the econometric technique for estimating panel data using statistical software for data analysis (STATA 12). In this context, the following table reports the descriptive statistics that characterize the series of FDI inflows retained on the sample period from 1998 to 2010:

Table 1. Descriptive statistics for the study variables

Variable	Observation	Average	Ecart-type	Minimum	Maximum
FDI	259	2, 48	2,65	-2,8	16,4
CBRT	220	0,42	1,13	-1,32	2,33
PSAV	220	0,016	0,9	-2,05	1,62
RL	221	0,42	1,1	-1,61	1,81
GEFF	220	0,56	1,01	-1,234	2,10
RQUAL	220	0,5	0,92	-1,34	2,06
VA	220	0,3	1,02	-1,43	1,73
RINF	260	3,91	5,25	-1,3	58,4
BPCA	259	0,3	7,45	-18,7	32,5
INFR	254	6,15	9,81	0	37,97
GDPG	260	3,28	3,39	-13,1	20,4
OPEN	258	0 ,7	0,38	0,19	2,2

Table 1 shows, for the period 1998 to 2010, the descriptive statistics of all variables used in our empirical analysis for all countries in the sample. We find that the FDI variable is between -2,8 and 16,4 with an average of 2, 48 and a standard deviation of 2,65 n . In fact, these recorded values show the existence of a significant volatility that characterizes, in this case, the distribution

of FDI flows in the sample. While, the variable CBRT has an average of 0,42 and a low dispersion of 1,13, knowing that volatile between -1,32 and 2,33. PSAV variable has an average of 0,016 and low variability 0,9. RL variable is between -1,61 and 1,81 with an average of 0,42 and a standard deviation of 1. 064. Thus, GEFF, RQUAL and VA have averages of 0,56, 0,5 and 0,3, respectively, and a standard deviation of 1,01, 0,92 and 1,02 respectively. However, RINF and BCGDP are on average 3,91 and 0,29 respectively, and high variability 5,27 and 7,48 respectively. Also, variables INFR, GDPG have an average of 6,15 and 3,28 respectively, and a standard deviation of 9,81 and 3,39. The opening rate variable varies between 0,19 and 2,2 and an average of 0,7 and a low of dispersion 0,38. We conclude that most variables represent a low variability compared to the average, which shows the homogeneity of variables.

5. 1. 2 The impact of PSAV, and CBRT ON THE RQUAL GDP

First, we introduce the variable STAB, to study its impact on the attractiveness of FDI. The examination of the Fisher statistic detects the global significance of the model. Indeed, we have obtained a value statistically significant at the 1% level to confirm the overall significance of the model (prob> F = 0,0011 <0,1). Also, according to the Fisher test (F = 4;15, prob> F = 0,000), we conclude that this model is homogeneous.

Table 2. The impact of PSAV, and CBRT ON THE RQUAL GDP

Variables	PSAV	RQUAL	CBRT
PSAV	**1. 282464****		
	(1 . 99)		
RQUAL		**2. 708162***	
		(2. 68)	
CBRT			**0. 204065**
			(0. 23)
RINF	**0. 0142966**	**0. 0023739**	**0. 0069952**
	(0. 37)	**(0. 06)**	**(0. 18)**
INFR	**-0. 0445364*****	**-0. 0620257***	**-0. 05501091****
	(-1. 96)	**(-2. 84)**	**(--2. 34)**

GDPG	**0. 1038136***	**0. 1007373***	**0. 1126864***
	(1. 82)	**(1. 78)**	**(1. 96)**
BPCA	**-0. 0736364****	**-0. 0736048****	**-0. 0797789****
	(-2. 00)	**(-2. 02)**	**(-2. 16)**
OPEN	**4. 070379****	**3. 042588***	**3. 88261****
	(2. 32)	**(1. 72)**	**(2. 18)**
CONS	**-0. 4043803**	**-0. 8166462**	**-0. 2620199**
	(-0. 33)	**(-0. 67)**	**(-0. 21)**
R^2	**0. 1101**	**0. 1247**	**0. 0917**
F	**0. 0011**	**0. 0003**	**0. 0054**
Hausman test	**0. 0002**	**0. 0001**	**0. 0011**

*, ** and *** indicate 1% , 5% and 10% significance levels, respectively
The first line shows the coefficients and the second line shows t-student

Then, we use the variable RQUAL to measure its impact on FDI inflows. This model is globally significant (prob> F = 0. 0003 <0. 1) and homogeneous (F = 4. 25, prob> F = 0. 000). As we enter the variable control of corruption (CORR) to clarify its influence on FDI. Also, we enter the variable control of corruption (CORR) to clarify its influence on FDI. This model is globally significant (prob> F = 0 . 0054 <0. 1) and homogeneous (F = 3. 42, prob> F = 0. 0054).

The coefficient of determination R^2 gives an idea of the percentage of variable variability. The higher the coefficient R^2 is close to 1, the more there is a better correlation in the model. When we use the variable PSAV, we obtain a value of (R^2= 11%), indicating that 11% of the variability of FDI is explained by these variables. Therefore, this fixed effect model is distinguished by a relatively low explanatory power. Also, models that relate the variables RQUAL and CBRT give a low explanatory power, 12,47% and 9,17% respectively.

Table 2 summarizes the results of our study. We note that all the control variables are statistically significant (at the 5% and 10%) except the variable inflation RINF. Firstly, the variable PSAV has a positive and significant effect at the 5% on FDI inflows. This result confirms the first hypothesis that political stability and absence of violence affects positively and significantly the FDI inflows. Our result affirms that political stability is an

important factor in the choice of multinational enterprises to invest in a foreign country. Secondly, regulatory quality has a positive and significant effect (at 1%) on FDI inflows. This result supports our theoretical hypothesis (H2). Indeed, the government's capacity to formulate and implement policies and regulations, that promote private sector development, stimulates FDI inflows. Thirdly, the control coefficient of corruption and bureaucratic red tape is positive and statistically insignificant. This result contradicts our assumption (3), that the CBRT has a positive and significant effect on FDI. The positive sign means that the more the country is making efforts to reduce the level of corruption, the more it attracts FDI. Moreover, a country that adopts measures to raise the level of transparency in its policies and institutions, realizes an increase in FDI inflows. Variable inflation (RINF) has a positive sign that is not significant. This result opposes our sixth hypothesis that inflation discourages FDI inflows. However, the effect of the infrastructure Index (INFR) appeared negative and significant at 10%, 1%, 5% respectively in the three models. Negative sign explains that bad infrastructure significantly discourages FDI. Indeed, infrastructure is a precondition for attracting FDI. The variable GDP growth (GDPG) which reflects the market size has a positive impact and statistically significant at 10% in the three models. This result corroborates with our fifth hypothesis. Concerning the balance of payments current account (BPCA), we observe a negative and significant effect at the 5% level in all three models. The negative sign indicates a deficit current balance. This deficit is generally covered by imposing high taxes on domestic and foreign companies, which increases the cost of investment, and therefore discourages FDI. In the end, the coefficient associated with the variable rate of trade openness is positive and significant at the 5%. This result conforms to (H5), the more the country is open to international trade, the more it attracts FDI.

5. 1. 3 The impact of RL, GEFF and VA on FDI

First, we take the variable of the rule of law (RL) to clarify its impact on FDI. This model is globally significant (prob > F = 0. 0049 < 0. 1) and homogeneous (prob = 0. 000 < 0. 1). Then, we introduce the variable GEFF to know its impact on FDI. Fisher

statistics can give the global significance of this model which is significant at 1% (prob > F = 0. 0049 < 0. 1). Also, This model is homogeneous (prob > F = 0. 000 < 0. 1). Finally, we use the variable of voice and accountability (VA) to study its influence on FDI inflows. This model is globally significant at 1% (prob > F = 0. 0029 < 0. 1) and homogeneous (prob > F = 0. 000 < 0. 1). The regression results are presented in the table 3:

Table 3. The impact of RL, GEFF and VA on FDI

Variables	RL	GEFF	VA
RL	0. 6337362		
	(0. 50)		
GEFF		0. 6731652	
		(0. 53)	
VA			-1. 387986
			(-1. 26)
RIF	0. 0080846	0. 0071658	-0. 0099851
	(0. 21)	(0. 19)	(-0. 25)
INFR	-0. 056105**	-0. 0530445**	-0. 0585311*
	(-2. 53)	(-2. 28)	(-2. 65)
GDPG	0. 1163644**	0. 1074337***	0. 1284016**
	(2. 01)	(1. 84)	(2. 20)
BPCA	-0. 0815049**	-0. 0811123**	-0. 0721074***
	(-2. 19)	(-2. 19)	(-1. 93)
OPEN	3. 780711**	3. 957963**	4. 168669**
	(2. 11)	(2. 24)	(2. 35)
CONS	-0. 373277	-0. 6069996	0. 0581133
	(-0. 29)	(-0. 42)	(0. 05)
R^2	0. 0927	0. 0928	0. 0991
F	0. 0049	0. 0049	0. 0029
Hausman test	0. 0004	0. 0003	0. 0001

*, ** and *** indicate 1% , 5% and 10% significance levels, respectively
The first line shows the coefficients and the second line shows t-student

The dependence coefficient R^2 has a value of 9. 27%, 9. 28% and 9. 91%, which means that these three models have a very low explanatory power. According to Table 3, we find that the rule of law has a positive impact on FDI inflows, which supports our fourth hypothesis. Therefore, systems of rules that is really executed, institutions that really work and maintain a favorable

implementation of these rules encourage FDI. Our result supports the conclusions of the neo-institutional theory that finds a transparent and effective legal system reduces transaction costs for economic actors, including foreign investors. Indeed, for developing countries that have ongoing transition to a market economy, must apply legal and judicial reforms. The variable of government effectiveness (GEFF) has a positive effect on FDI inflows, which is not significant. Indeed, the quality of the public services and the degree of its independence from political pressures, the quality of policy formulation and implementation and the credibility of the government's commitment to such policies have an impact on FDI. This result confirms our fourth hypothesis. The coefficient relative to the variable of voice and accountability (VA) has a negative and statistically significant impact, which opposes the fourth hypothesis. This negative sign indicates that the lack of accountability and lack of democracy discourages FDI inflows.

Through our results in the overall model, only political stability and regulatory quality are important determinants for FDI inflows in these countries.

In the second part, we divided our sample in to two groups: a group of developed countries and another of developing countries, and we studied if the model, governance-FDI is significant or not in the two groups, independently of one another.

5.2 Developed countries

In this context, we studied the influence of governance indicators on the inflow of FDI in the 10 developed countries in our sample. And we found that the four governance indicators namely, PSAV, QUAL, CBRT, GEFF have a positive and significant impact on FDI inflows in these countries. While the variables RL and VA have no significant impact.

First, we studied the impact of variable PSAV on FDI inflows. For this model, the probability of the Hausman test is less than 10% **(**p = 0. 0528), which implies that the fixed effects model is more appropriate than the random effects model. Also, this model is globally significant level of 1% (prob > F = 0. 0035 < 0.

1) and homogeneous (prob > F = 0. 001 < 0. 1). Then, we checked the influence of the variable RQUAL on FDI. For this model, the probability of the Hausman test is higher than 10% (P = 17. 44 %), which implies that the random effects model is more appropriate than the fixed effects model. Also this model is globally significant at 1% (prob > chi2 = 0. 00). To study the effect of corruption on FDI inflows in developed countries, we used the random effects model, because the probability of the Hausman test is greater than 10%. Finally, we introduced the variable GEFF to verify its impact on FDI. The estimation results are reported in the following table:

Table 4. The impact of RL, GEFF and VA on FDI

Variables	PSAV	RQUAL	CORR	EFFI
PSAV	2. 702201** (2. 39)			
RQUAL		3. 010073* (3. 71)		
CBRT			1. 772752* (3. 28)	
GEFF				2. 406599* (3. 67)
RINF	0. 1312824 (0. 44)	-0. 1500469 (-0. 56)	0. 1065682 (0. 39)	0. 024938 (0. 09)
INFR	-0. 319828 (-1. 01)	-0. 048016** (-1. 79)	-0. 03289 (-1. 23)	-0. 031014 (-1. 17)
GDPG	0. 1167928 (0. 96)	0. 1304282 (1. 15)	0. 1026451 (0. 88)	0. 1105431 (0. 96)
BPCA	-0. 3433354** (-2. 52)	-0. 0563079 (-0. 89)	-0. 0871571 (-1. 26)	-0. 1013515 (-1. 51)
OPEN	4. 155172 (0. 87)	3. 607757* (3. 35)	3. 515469* (2. 98)	4. 09935* (4. 00)
CONS	-2. 595857 (-0. 89)	-3. 114394* (-2. 96)	-2. 204386** (-2. 26)	-3. 428038* (-3. 09)
R^2	0. 1884	0. 3296	0. 3187	0. 3249
F ou chi2	0. 0035	0. 0000	0. 0000	0. 0000
Hausman test	0. 0528	0. 1744	0. 2517	0. 1548

*, ** and *** indicate 1% , 5% and 10% significance levels, respectively

The first line shows the coefficients
For the first model, the second shows t-student is presented in parentheses.
For the second, third, and fourth model, the second line shows the statistics (z) are also presented in parentheses.

Table (4) shows that when we use the variable PSAV, we obtain a model of a low dependence coefficient which is equal to 18,84%. That is to say the variables in this model explain FDI to 18,84%. While for the other three models in which we entered variables RQUAL, CBRT, GEFF respectively, we found a higher explanatory power than the first model, 32,96%, 32,87% and 32,49% respectively.

First, we note that the variable of political stability and absence of violence (PSAV) is positively and significantly (at the 1% level) related to FDI inflows in developed countries. This also confirms our theoretical hypothesis. Indeed, political stability is considered an important condition for the attractiveness of FDI. In reality, investors do not introduce their capital in countries characterized by crises, problems and conflicts of elections, because these situations increase the levels of investment risk. Several authors argue that investors choose to invest in developed countries, because they are politically stable.

Regulatory quality has a positive and significant impact at 1% on FDI inflows in developed countries. In addition, there is a positive and significant relationship between control of corruption and entered FDI. This result justifies our third hypothesis. Similarly, the variable effectiveness of government seems to have a positive and significant effect (at 1%) of the FDI inflows in developed countries (hypothesis 4). In addition, the inflation rate RINF in the second model has a negative and insignificant effect that is to say that the level of inflation evolves in the opposite direction of the FDI inflows. This result validates our sixth hypothesis. We note that the infrastructure Index always has a negative and significant impact (we explained this in the global model). But in table 4, only in the second model, it appeared significant. Also, we noted that the coefficient of the variable GDPG in developed countries appeared positive, but not significant which contradicts our fifth hypothesis. When the variable BPCA, still exerts a negative and significant effect in the overall model. But in developed countries, it seems insignificant except for the first model which appears negative and significant. Finally, the opening rate (OPEN) always has a positive and significant

relationship with the incoming FDI, which is consistent with our fifth hypothesis. But in the first model it appeared insignificant.

From the preceding results, we conclude that the governance-FDI model is significant in developed countries. Among of the six governance indicators, there are four that have an important role in the attraction of FDI.

5.3 developing countries

In this context, we examined the impact of governance indicators on FDI inflows in 10 developing countries in our sample. We got only one indicator of the regulatory quality that has a significant impact on FDI flows in these countries.

First, we used the variable political stability and absence of violence PSAV to study its impact on FDI inflows in developing countries. We used the fixed effects model as an estimation procedure because the probability of the Hausman test is less than 10%. We obtain an overall model significant at 5% (prob > F = 0. 0153), and homogeneous (prob > F = 0. 000 < 0. 1). Then we entered the variable RQUAL also to clarify its influence on FDI inflows in 10 developing countries in our sample. This model is globally significant at 1%. The estimation results are reported in Table 5:

Table 5. The impact PSAV and RQUAL on FDI inflows in developing countries

Variables	PSAV	RQUAL
PSAV	0. 1968477 (0. 29)	
RQUAL		2. 351847** (2. 20)
RINF	-0. 0022077 (-0. 07)	-0. 0034787 (-0. 12)
INFR	0. 3779466** (2. 51)	0. 3457603** (2. 35)
GDPG	0. 1092733*** (1. 93)	0. 1020575*** (1. 84)
BPCA	-0. 0484076 (-1. 59)	-0. 0473193 (-1. 60)

OPEN	**4. 494654*** **(2. 85)**	**3. 573836**** **(2. 26)**
CONS	**-1. 470629** **(-1. 10)**	**-0. 0478648** **(-0. 03)**
R^2	**0. 1541**	**0. 1955**
F	**0. 0153**	**0. 0023**
Hausman test	**0. 0181**	**0. 0065**

According to table 5, we noted that the variable PSAV has a positive and insignificant impact on FDI inflows, which opposes our first hypothesis. Indeed, there is a positive but not significant relationship between political stability and absence of violence and FDI inflows. Then, there is a positive and statistically significant (at the 5% level) between regulatory quality and inward FDI in developing countries (hypothesis 2). In addition, the inflation rate RINF seems to have a negative effect but insignificant on FDI inflows, which confirms our sixth hypothesis.

Unlike all the results obtained in previous models, the coefficient of the variable subscribes to thigh-Speed fixed Interne (INFR) in developing countries in our sample appeared positive and significant at the 5% level. Concerning the coefficients of GDPG, OPEN variables, we found the same results that the global model, which are positive and significant at 10%, 1%, respectively. This result confirms our fifth hypothesis. The coefficient of BPCA variable is always negative and significant, but in developing countries, it became negative but insignificant. The negative sign indicates a deficit in the current account in these developing countries.

6 Conclusion

The main objective of this paper is to examine the influence of governance indicators on the attractiveness of foreign direct investment in 20 developed and developing countries over the period 1998–2010 using a fixed effect model, for the majority of models, with each explanatory variable in the equation. The results indicate that only two indicators of governance namely, political

stability and regulatory quality have a significant impact on FDI inflows. This indicates, for our overall sample, that foreign investors are interested in political stability and regulatory quality in their choice of investment abroad.

Then, in our sample we tried to study the impact of these six indicators of FDI inflows in 10 developing countries. We found that only the quality of regulation has a significant impact on FDI inflows in these countries. While, we found four governance indicators that have a significant and positive impact on the attractiveness of FDI in developed countries namely; PSAV, RQUAL, CBRT, GEFF, indicating that governance has a significant impact on the inputs of FDI in the developed countries.

This paper also investigates the impact of macroeconomic variables on the attractiveness of FDI. Generally, in most models, either developed or developing countries, these variables provide a significant sign, which indicates the importance of these factors in the attraction of FDI. Indeed, market size, trade openness, a good or bad infrastructure, the current account deficit have a significant effect on FDI inflows.

From our results in three models (global, developed countries and developing countries), we concluded the importance of political stability and regulatory quality and macroeconomic variables in the attraction of FDI.

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