Political and Institutional Determinants of Foreign Direct Investment: An Application for MENA Region Countries

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Abstract: The objective of this work is to identify the determinants of foreign direct investment (FDI). In other words our aim is to specify the roles of political and institutional factors in attracting foreign direct investment? We decompose these factors into three categories (political, policy risks and institutional). We use a panel data technique based on a sample of 20 MENA's region countries over the period 2002-2012. Empirical results show that only political factors and political risks are statistically significant.

Keywords: FDI, political risk factors, institutional factor, Panel.

1. Introduction

Over the 90 years, capital inflows have become increasingly important in developing countries. Macroeconomic stabilization policies and reforms adopted by these countries have attracted massive capital flows. The international capital flows come in many forms such as foreign direct investment, portfolio investment and bank lending. In fact, foreign direct investment and portfolio investment continued to be the main sources of international capital flows for which countries compete. Although the nature of these two types of investments is different from one country to another, host countries prefer FDI over the portfolio investment. Given that the latter is regarded as the riskiest and most volatile to financial stability in recipient countries. Also, the 1997-1998 Asian crisis showed that FDI is more stable compared to other forms of capital flows when there is a deterioration of economic activity. FDI is not only a source of capital for the host country, but it also brings new technologies and knowledge. Moreover, FDI creates jobs and introduces modern production and management technology to the host countries.

To take advantages from FDI, several countries in the MENA region have adopted attractiveness policies. In fact, policies conducted by these countries include economic liberalization, tax exemptions and financial subsidies. Despite efforts to attract FDI, these countries have not come to attract a significant share of FDI compared to the rest of the world region (Sekkat 2004). Makdissi, Limam and Fattah (2005) showed that the weak performance of MENA region is due to the low level of integration at the world scale and the low level of institutions.

Our approach consists at studying firstly the factors determining FDI. Secondly we present an empirical literature explaining the attraction of FDI factors. Thirdly we present the results concerning determinants of FDI in the MENA region from a non-cylindrical panel.

2. Overview of the Theoretical Literature

To explain the differences in FDI flows between countries and to understand the behavior of international investors, it is necessary to identify the main factors explaining the attraction of FDI. The factors that attract FDI are mainly based on the advantages offered by various host countries in terms of available factor and reduced cost of production. Mundell (1957) assumes that the factor endowments differences helps explain trade including the relocation of the firm. This results in a substitution relationship between trade and FDI. The study of Adjubei (1993) shows that the cost of labor is a key factor in attracting FDI in the transition economies. Econometric studies confirm that the unit cost gap of labor is not significant in attracting FDI in the countries of Central and Eastern Europe (Meyer 1995 and 1998 Andreff M, 2002).

In addition, other researchers have defended the thesis that the low wage cost is a determinant of FDI inflows as the case of the Economic and Monetary Community of Central Africa (CEMAC). However, theories of international trade are restrictive to the extent that most multinational firms operate in markets with imperfect competition. In fact, when the market is perfect, there would be little incentive for firms to take the risk of investing outside. Among the risks that encountered the multinational firm are: lack of knowledge of the environment, communication cost, consumer preference for local products and policies adopted by home countries.

The new trade theory developed by Brainard (1993) and Markusen (1995), incorporate elements of imperfect competition by highlighting the role of two factors (cost and demand on the home market) in strategic choices of multinationals. According to these theories, the firm decides to implement a market either through exports or through the production taking arbitration between the benefits of proximity to consumers and concentration. In fact, when the benefits of implanting close to consumers exceed the benefits of concentration of activities, the company is investing to gain a foothold in several production sites to serve local markets. This type of FDI is called horizontal.

Thus, the benefits of proximity are higher than those of concentration if the firm achieves economies of scale between different production sites, if the cost of implementation is low and when the demand on the home market is very high. The model of Markusen et al (1996) classes the multinational according to their type and managed to overcome the shortcomings of models Brainard Markusen regarding Arbitration and proximity concentration. However, we speak of vertical type of multinational firms when firms are operating in a thought international division of the production process. The multinational firms divided their activities between countries according to comparative advantages (factor endowment, countries in size, low cost of labor). Also, Duning (1988) presents three essential conditions for the firm to invest in foreign market. These conditions are the advantages of possessions (Ownership advantages), the advantages of locations (rental advantages) and internalization advantages (Internalization advantage). Dunning described them theory "OLI". Moreover, the quality of institutions is a more important factor in attracting FDI. Indeed, they can reduce investment costs; reduce risk and lower costs of foreign exchange transactions. A well established property rights are required for FDI because it decreases the risk of expropriation of investment. In this context, the work of Knack and keefer (1995) suggest that the institutions that support property rights are important for economic growth investment. However, the weak and institutional environment in terms of enforcement of laws and corruption increases the cost of investment and discourage foreign direct investment in host countries (Shleifer and Vishny, 1993; Wei 2000).

3. Empirical Literature Review

Despite the focus on FDI in the economies and the rich literature on the subject, the authors did not result in conciliation on a unified theoretical framework for understanding the determinants of FDI. Several economic factors can attract FDI such as market size, labor cost, trade openness, economic stability.

The market size is considered a crucial determinant for most empirical work (see Bhavan et al (2011); Ting and Tang (2010); Leitao and Faustino (2010); Leitao (2010); and Lv al (2010); Hailu (2010); Schneider and Matei (2010); Mohamed and Sidiropoulos (2010). Most studies have used the real per capita GDP or GNP per capita as a measure of market size. FDI attraction is also dependent on the degree of integration into the global economy. A more open trade is a means for developing countries with small markets to expand their markets. The majority of empirical studies conclude that markets commercial openness is positively correlated with FDI in the host countries. Thus, empirical studies measured the opening as the sum of imports and exports relative to GDP (Bhavan et al (2011). Ting Tang (2010); Leitao and Faustino (2010); leitao (2010).

The lowering of wage costs is also one of the most important factors to explain the new forms of foreign implantation. The

empirical literature has been controversy about the role of labor costs in attracting FDI. Some studies find that higher wages discourages foreign direct investment as Glodsbrough (1979), Flamm (1984); Shneider and Frey (1985); Culem (1988) and Shamsuddin (1994). So Xing (2004) concludes that low labor costs in China has been the main source of FDI attraction. MNCs invest abroad to source specific resources for a small fee and Lundan Dunning (2008). FDI in search of resource is motivated by the availability of natural resources in host countries. Thus, natural resources play an important role in attracting FDI. The work of Asiedu (2002.2006) and Dupasquier Osajwe (2006) reach the conclusion that the natural resources in Africa are attracting large volumes of FDI. Similarly research and Dupasquier Osakwe (2006); Deichmann et al (2003) showed that the existence of natural resources has a positive effect on FDI flows. Similarly Mohamed and Sidiropoulos (2010) on a sample of 36 countries including 12 countries in the MENA region and 24 developing countries conclude that the determinants of FDI flows in MENA are natural resources, the size of host countries, the size of government and institutions.

Moreover, empirical studies state that weak institutions discourage foreign Direct investment (see Gastañaga et al (1998); Campos et al (1999); Asiedu and Villamil (2000), Wei (2000), Asiedu (2006); Ting and Tang (2010)). So, countries with good institutional quality are likely to attract FDI in manufacturing sectors (Mehic et al., 2009). For Mohamed and Sidiropoulos (2010) they find that institutional variables are the main determinants of FDI in the MENA region. Habib M and L Zurawicki (2002) and Smarzynska and Wei (2002) found a negative relationship between corruption and FDI. Asiedu (2003) based on a sample of 22 countries in sub-Saharan Africa show that the effectiveness of institutions, political and economic stability and low levels of corruption encourage inflows of private capital. By cons, Wijeweera and Dollar did not find a significant relationship between corruption and FDI. For Globerman and Shapiro (2002), the national political infrastructure measured by six indicators of governance is a crucial variable for the outputs of the US FDI-oriented to developing countries and countries in transition.

4. Model Specification

In order to study the determinants of foreign Direct Investment and their roles in attracting funds in the case of North Africa and Middle East (MENA), we will build a panel model of 20 countries, with which integrates the various factors of attraction of FDI. Recent literature finds a positive relationship between FDI and development and especially in the context of developing countries when it has good institution and a stable macroeconomic framework. The model to be estimated is composed of three main factors: a series of political variables, of political risk and institutional variables.

FDI% of GDP = f (political, political risks, institutional factors)

The IDE is not only influenced by these factors. We will try to add other factors to expand the model range. To our

knowledge, the model enlargement reduces the risk of omission of relevant variables. Thus, the addition of other variables will capture other determinants that affect the attraction of FDI in the MENA region. The expanded model can be written as follows:

IDE/PIB= $\alpha_i + \alpha_1 inf_{it} + \alpha_2 ouv_{it} +$ (1) $\alpha_3 stab_{it} + \alpha_4 QR + \alpha_5 EG_{it} + \alpha_6 cor_{it} + \alpha_7 ED_{it} +$

$$\alpha_{g}VR_{it} + \alpha_{9}CH_{it} + \alpha_{10}TM_{it} + Infra_{it} + \epsilon_{it}$$

Where FDI% of GDP represents net inflows of FDI as a percentage of GDP in country i at time t; α_i are individual effects; β_i represent parameters to be estimated; ε_{it} is model error on individual i at time t. $\varepsilon_{it} = U_i + V_{it}$: admits two components: U_i is the unobservable fixed effect specific for each country and V_{it} : the temporal effect.

3.1 Data Source

The data used in this study come from the World Bank and from "World Wide Governance Research Indicators" developed by Kaufman, Kraay and Mastruzzi (K KM). At the beginning of their creation in 1996, governance indicators were available every two years, and since 2002 they begun available annually. That why the series are examined on an annual basis from 2002 to 2012, a period of 10 years.

3.2 Variables Definition

- Dependant variable: The dependent variable FDI/GDP: refers to net inflows of FDI as a percentage of GDP in country i at time t based on the gross domestic product.
- Independent variable: The empirical literature is mixed on the factors that are likely to attract FDI. In our work, we divided them into three types. We tried to see what factors are responsible for attracting FDI and factors that hinder FDI inflows.
- ✓ Political factors: In this study we will retain as political factors the variable openness and the inflation rate.
- Opens: measures the degree of openness of the economy. It is measured by the sum of exports and imports to GDP. The MENA region countries engage in open policy to attract FDI. The expected effect is positive.
- Infl: the inflation rate variable is measured based on consumer price index. The incressed level of inflation is expected to reduce FDI. The work of Schneider and Frey (1985) indicate that multinational companies will be less incentive to invest in the country where the inflation rate is high. Similarly, Garibaldi (2001) showed that inflation negatively affects FDI.

- The political risk factors: These factors include the following variable:
- **PS**: political stability and absence of violence measures the likelihood of violent threat or change in the government including terrorism.
- **GE**: Government Effectiveness measures the jurisdiction of the quality of public services
- **RQ**: Regulatory Quality measures the free market operation.
- ✓ Institutional factors: Institutional factors are summarized in the following three factors (corruption, the rule of law and voice and accountability).
- **Corrup**: measures the level of control of corruption in a country.
- **Rights**: rights state measure the level of law enforcement.
- VA: voice and accountability measure political, civil and human rights.
- ✓ Other explanatory variables
- **MS**: the market size is a factor of attractiveness of a horizontal IDE. The larger the market sizes, the more easily for foreign investors to find an outlet for their product. In our study we used the real GDP per capita as a proxy for market size. Given the need to consider the size in terms of population and income as mentioned Merlevde and Schoors (2004). In other words, it is not important to invest in a country with a high GDP per capita but a very small number of consumers.
- Infra: Infrastructure refers to the existence of efficient transport networks (road, rail, infrastructure, postal, air, sea), to the installation of modern telecommunications technology (fax, internet) and implementation of industrial area. Production cost decreases in countries where they have a better quality of infrastructure. It is expected that countries with a good infrastructure attracts more FDI (Morisset, 2000; Alfaro et al, 2005). In this study, infrastructure is approximated by the number of telephone line per 100 persons in a country. Several studies have shown the importance of infrastructure for FDI such as Asiedu 2002 Kinda 2008, 2001 and Ngowi Wheeler and Mody, 1992.
- **HC:** Human capital is measured by the secondary school enrollment. The study of Michalets (1993) suggests that the availability of a skilled workforce is an important dimension of the attractiveness of FDI. It is expected that countries with skilled labor is likely to attract FDI.

5. Estimation Results

Table 1. Descriptive statistics									
Variable	Obs	Moyenne	Ecart type	Min	Max				
IDE	209	1, 309017	0,8184881	-1,414694	3, 362942				
Inf	202	6,878069	8,83715	-10,067	53,231				
Opens	182	92 ,40483	29,89948	40,987	182,506				
Political Stability	218	-0,4287844	1,072623	-3,185	1,543				
Regulatory Quality	218	-0,2204587	0,8225247	-1 ,994	1,43				
Govenment effectivenes	218	-0,1638349	0,785385	-1,877	1,368				
Corruption	218	-0,1579725	0,768482	-1,576	1,723				
Rights	218	-0,1111835	0,7969944	-1 ,924	1,597				
Voice and Accountability	218	-0,827055	0,7472017	-2,041	1,341				
Humain Capital	167	80,92962	21.28286	16.631	114.276				

Table 1: Descriptive statistics

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Market Size	215	2,081819	10,208	-62,466	102,777
Number of telephone lines	220	17,20023	13 ,27611	1,347	58,384

Table 1 summarizes statistical properties of the variables used in our model. In the total sample the average proportion of net inflows of FDI in GDP percentage is of the order of 1,309 milliard dollars over the period 2002-2012. In fact, yemen registers the lowest rate of FDI inflows during the years 2003, 2005 and 2011. This weakness of FDI in this country is mainly due to political instability and weak law enforcement that has seen the region. In 2011, the outbreak of the revolution weakens the FDI inflows in the country, is in the range -1.773 billion. In addition, Egypt has recorded a low net inflow of FDI in 2011, reaching a value of -0.205 billion. This is mainly due to political instability.

Our aim is to test the existence of correlation between the explanatory variables and individual effects through the Hausman test. First, it is necessary to check the existence of the individual effects. Indeed, the null hypothesis implies the absence of the individual effects. By cons, when accepting the existence of the individual effects in our data, it is important to realize the Hausman test to specify between the random effects model and the fixed effects model. Thus, when the Hausman test probability is less than 5% then the fixed effects model is better than a random pattern.

Heteroscedasticity describes data whose variances are not constant. Heteroscedasticity is a common situation encountered in the data, it is important to detect and correct this problem. To test heteroscedasticity in a model with fixed or random effects, we will use the test Breush-Pagan. The idea of this test is to verify whether the residues of the square can be explained by variables of the model.

In our case, we will compare statisticsn * \mathbb{R}^2 , that under the assumption H_0 of homoscedasticity follows a chi-2 with k-1 degrees of freedom, n and \mathbb{R}^2 are respectively the number of observation and the coefficient of determination of the model, k is the number of explanatory variables including the constant. The decision rule, we reject H_0 and we accept the hypothesis of heteroscedasticity when $(n * \mathbb{R}^2 > X^2(K - 1))$. For this reason, the regression must include robust option. For all models, the test Wooldridge suggests the presence of autocorrelation in all models.

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The model M_1 expresses the IDE according to macroeconomic stability as measured by the rate of inflation. In the model M_2 , we integrate a policy variable that is the rate of trade openness. In the model M_3 , we incorporate a variable of political risk factors as political stability since it is a crucial factor in attracting FDI.

The models M_4 and M_5 introduce respectively other variables of political risks the quality of regulation and the effectiveness of government.

In the model M_6 , we introduce an institutional variable that is corruption to see if the area is affected by low transparency. In models M_7 , and M_8 we add the two variables rights (the state of law) that tells us about the degree of implementation of law and voice and accountability to capture the role of institutional factors in attracting FDI. We added Other control variables in the models M_9 , M_{10} and M_{11} to capture other factors that are likely to attract FDI. These include the human capital variables, the market size that is measured by GDP per capita and infrastructure variable.

Table 2 gives us a clear idea about the parameters and coefficients of the variables significance. In the model M_1 inflation is positive and statistically significant at the 10%. In fact, the 1% increase of inflation enhances the flow of net FDI inflows of 0.011 points. This confirms the thesis of Garibaldi, Mora, Sahay, and Zettelmeyer (2001) which show that inflation helps attracting foreign direct investment in transition economies.

After testing the effect of openness on FDI, our interest focuses on the introduction of the variable openness in the model to capture the effect of such a policy on net FDI inflows. It is found that the coefficient of openness is positive and statistically significant at 1%. An increase of 1% in the openness policy contributes to an increase of 0.017 in IDE. FDI seek a foothold in the most open economies. This effect appears similar to the effects found by the work of Bouklia -Hassane and Zatla (2001) that suggest that openness attract FDI in the SEMCs.

The introduction of political stability in the model 3 as political risk variable gives an idea about the importance of political stability in attracting FDI. Given that violence, riots deters investors to implement in a country. In our model, we note that political stability has a positive effect on FDI. Indeed, increased political stability of 1% improves IDE of about 0.005 points. This thesis was confirmed on the works of Habib and Zarawicki (2001), Globerman and Shapiro (2002), and Shingh Jur (1995). These authors showed that the political risk affects negatively FDI inflows.

As regards the variable effectiveness of government in the model it is negative and statistically significant at the 5% threshold. This may reflect the government's ineffectiveness in attracting FDI. For institutional variables they are not significant overall respectively in the model M6, M7 and M8. Even the introduction of control variables is generally insignificant in M9, M10 and M11.

6. Conclusion

We have tried throughout this work to determine the factors that explain the FDI inflows to the region through the East and North of Africa. Given that FDI inflows can be beneficial for the region in terms of human capital formation and job creation, our study focuses on 20 countries in the MENA region over the period 2002-2012. The results indicate that during the period studied variables of political and policy risk are the most important determinants in relation to institutional determinants. Despite the importance of openness policies the region remains less attractive for FDI. This is due to the uncertainty and political instability that have experienced most of the countries of the region.

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