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Institutions and Foreign Direct Investment (FDI) in Mena Countries: A Panel ARDL Study

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ABSTRACT

This paper aims to investigate the role of institutional variables upon the inflow of foreign direct investment (FDI) in selected MENA (Middle East and North Africa) countries. This study used a panel ARDL model, or Pooled Mean Group (PMG) estimation proposed by Pesaran et al. (1999), in which it enables to capture the long-run and short-run relationship among the variables of interest. This study focuses on several institution variables namely the investment profile, internal conflict, democratic accountability, bureaucracy quality and military in politics. The empirical findings revealed that the investment profile, internal conflict, and bureaucracy are positively and statistically significant in influencing the inflow of FDI. Thus, in attracting foreign investors, the policy maker in MENA countries should implement a FDI-friendly policies by providing and maintaining the quality of domestic institutions.

Keyword: Institution; Foreign Direct Investment (FDI); Panel ARDL; MENA

INTRODUCTION

Foreign direct investment (FDI) plays an important role in promoting a long run economic growth in both developing and less-developed countries through increasing the domestic capital formation. FDI can contribute to the economic development in terms of the transfer of new technology and skills, establishment of large-scale industries, and increase in the productivity growth.

Thus, the significant effect of FDI on economic growth has motivated many researchers to study the main factors that determine the inflow of FDI across countries. The most important factors that determine the inflow of FDI are domestic market size, trade openness, cost of labor, persistency in economic growth as well as a low tax and tariff (see for example Ang (2008)). However, most of the prior studies have not taken into account the role of institutions on FDI. Since the late 1990's, the literature on FDI has been renewed to focusing on the quality of institutions as among the key factors in explaining the inflow of FDI. For example, Quere et al. (2007) have stated three reasons why the quality of institutions may matter for attracting FDI. First, by raising productivity prospects, good governance and infrastructure may attract foreign investors. Second, poor institutions can bring additional costs to FDI (for example, in the case of corruption). The third reason is due to the sunk cost where FDI is especially vulnerable to any forms of uncertainties, including that stemming from poor government efficiency, policy reversals and weak enforcement of property rights and legal system in general. For that reason, by maintaining a quality institution, more investments can be attracted, which in turn can expedite the economic growth process.

This paper aims to examine the role of institutional variables (political risks) upon the inflow of FDI in selected MENA countries. The choice of MENA countries is motivated by the fact that a significant numbers of countries in the region have been experiencing intense economic growth and institutional reforms. Furthermore, the members have undergone through a progressive elimination of trade barriers which in turn boosted the trade relations and somewhat liberalised the investment regulatory framework. However the impact of such institutional reform on the inward FDI of these countries is rather unknown as not many studies have been trying to investigate the impact of the institutional variables, which are quit related to the reforms, on the inward FDI performance.

There is consensus among the academicians that good institutions favour the inward flow of FDI. However, this question has not been definitely solved. In what concern, the so called MENA region, the inflow of FDI has been low compared to others developing and emerging countries as well as the developed countries (Hisarcikliar, et.al. 2006).As Caetano and Galego (2009) argue some features of the MENA countries could be important obstacles for the inward FDI performance. Despite the fact that the region endowed with huge oil resources, however the region has under-developed capital and financial markets. The main reasons why the MENA countries are not attractive as an investment destinations because of the lack of democracy and transparency, the un-development of physical infrastructure and consequently the low rate return of human as well as physical capital.

The contribution of this paper is differed from the previous literature in two ways. First, it investigates the determinants of FDI by focusing on the MENA countries and emphasizing on the institutional variables including, corruption index, law and order, the bureaucracy, investment profile, and government stability.Although Caetano and Galego (2009) have studied the determinant of FDI, but it is comparing with European country and it also include other economic variables beside the institution variables. For better understanding the important of institutional variable to the FDI in MENA countries, we do not control others variables (like economic variables) because using too many parameters in model will cause the loss of degree of freedom.Second, compared to previous studies, this paper uses a newly developed econometric technique known as panel ARDL model or Pooled Mean Group (PMG) estimation proposed by Pesaran et al. (1999). This modelis able to capture the long-run and short-run relationship among the variables of interest, and also examine the dynamic effects of institutional variables on FDI.

The results of the study revealed that institutional variables play important roles in influencing the inflow of FDI in the long-run. Several institutional variables like investment profile, internal conflict, and bureaucracy are positively in influencing the inflow of

The remainder of the paper is organized as follows: Section 2 provides a short literature relating to the relationship between institutions and FDI, Section 3 presents the econometric methodology by focusing on definitions of the institution variables and econometric modelling. Section 4 presents the empirical results followed by conclusion.

LITERATURE REVIEW

There have been a number of studies investigating the impact of the quality of institutions on the FDI using different methodologies, time spans, and geographical regions. Majority of the studies asserted the well-functioning institutions are an important factor in attracting the foreign direct investment. For example, Wei (1997) using a bilateral aggregate FDI flow data finds that that corruption can negatively affect the inward FDI. Daude and Stein (2007) also using a bilateral foreign direct investment stocks founds that unpredictability of laws, regulations and policies excessive regulatory burden, government instability and lack of commitment have a negative impact on the flow of FDI into a country. Benass-Quere.et al. (2007) pointed out that bureaucracy, corruption, availability of information, banking sector development and legal institution are important determinants of inward FDI. He also found that a weak capital concentration and employment protection intends to reduce the inward FDI. Busse and Hefeker (2007) found that government stability, internal and external conflict, corruption and ethnic tensions, law and order, democratic accountability of government, and quality of bureaucracy are highly significant determinants of foreign investment inflows. Julan. et al (2008) using a data set of 6288 US multinationals investing in various regions in China found that US multinational prefer to invest in those area that have better protection of intellectual property right, a lower degree of government intervention in business operations, a lower level of government corruption, and better contract enforcement.

Meon and Sekkat (2004) investigate the impact of the quality of institutions on manufactured exports and FDI in MENA countries. Their results show that a low level of corruption and high level of bureaucracy contribute significantly to the firms' decision to invest abroad. Caetano and Galego (2009) used a panel data which include 17 MENA countries and 25 European countries to investigate the impact of institutional variables on FDI. They found that investment freedom have positive and significant correlation with FDI in both regions, while the size of the government negatively affects the inward FDI. Caetano and Caleiro (2009) also found that the economic freedom and the inward FDI are positively associated in the MENA and EU countries.

Kobeissi (2005) also asserted governance, legal system and economic freedom are the important factors affecting the inflow of FDI in the MENA region. Based on his finding governance is the most simportant variable followed by legal system and economic freedom. Daniele et.al (2006)

revealed that the voice and accountability, goverment effectiveness, regulatory burden, rule of law and control of corruption as a major determinants of FDI. More recently, Sufian and Sidiropoulos (2010) found that the key determinants of FDI inflows in MENA countries are the size of the host economy, the government size,natural resources and the institutional variables.

Based on this background, this study provides a noble contribution on the nexus of institutions-FDI in MENA countries. Specifically, it investigates the role of institutional quality namely as investment profile, internal conflict, democratic accountability, bureaucracy quality and military in politics with using a newly developed econometric technique known as panel ARDL model or Pooled Mean Group (PMG) estimation proposed by Pesaran et al. (1999).

METHODOLOGY

Data and the Definition of Variables

This study used a panel data set, which are including 14 MENA countries for the period of 1984 until 2009. The data sources of dependent variable namely FDI, is collected from IFS database. The data for institution variable are obtained from International Country Risk Guide (ICRG) database. The ICRG provide 22 variable in three main categories of risk, namely political, finance, and economic risk. As in most studies in the empirical literature on FDI flows, the logarithm for investment flows and theindependent variables is used. Following Busse and Hefeker(2007), since some of the observations for FDI are negative, we transform both variables using the following procedure:

$$y = \ln(x + \sqrt{(x^2 + 1)})$$

Among these variables, we select the five variables from political risk component, which are investment profile, internal conflict, military in politics, democratic accountability and bureaucracy quality in investigating the role of institution variables upon the inflow of FDI into MENA countries. These variables are measured by using points (risk points). The scale of each variable can be categorized as either from 0 to points 12, 0 to 6 points and 0 to 4 points, which mean the highest number of points represent that the lowest potential risk and better institution. The further detail definition and explanation of the institution variables are as follow:

(i) Investment profile – 12 points

This is an assessment of factors affecting the risk to investment that are not covered by other political, economic and financial risk component. The risk rating assigned is the sum of three subcomponents, each with a maximum score of 4 points and minimum score of 0 points. A score of 4 points equates to very low risk and a score of 0 points to very high risk. The subcomponents are contract viability or expropriation, profit repatriation and payment delays.

(ii) Internal Conflict – 12 points

This is an assessment of political violence in the country and its actual or potential impact on governance. The highest rating is given to those countries where there is no armed or civil opposition to the government and the government does not indulge in arbitrary violence, direct or indirect, against its own people. The lowest rating is given to a country embroiled in an on-going civil war. The risk rating assigned is the sum of three subcomponents, each with a maximum score of four points and a minimum score of 0 points. A score of 4 points equates to very low risk and a score of 0 points to very high risk. The subcomponents are civil war/coup threat, terrorism/political violence and civil disorder.

(iii) Military in Politics – 6 points

Military involvement in political, event at a peripheral level is a diminution of democratic accountability. In some countries, the threat of military take-over can force an elected government to change policy or cause its replacement by another government more amenable to the military's wishes. A military takeover or threat of a takeover may also represent a high risk if it is an indication that the government is unable to function effectively and that the country therefore has an uneasy environment

for foreign business. The lower risk ratings indicate a greater degree of military participation in politics and a higher level of political risk.

(iv) Democratic Accountability – 6 points

This is a measure of how responsive government is to its people, on the basis that the less responsive it is, the more likely it is that the government will fall, peacefully in a democratic society, but possibly violently in a non-democratic one. The points in this component are awarded on the basis of the type of governance enjoyed by the country in question. The type of governance can be define as following, namely alternating democracy, dominated democracy, de facto one-party state, de jure one-party state, autarchy. In general, the highest number of risk points (lowest risk) is assigned to Alternating Democracies, while the lowest number of risk points (highest risk) is assigned to Autarchies.

(v) Bureaucracy Quality – 4 points

The institutional strength and quality of the bureaucracy is another shock absorber that tends to minimize revisions of policy when governments change. Therefore, high points are given to countries where the bureaucracy has the strength and expertise to govern without drastic changes in policy or interruptions in government services. In these low-risk countries, the bureaucracy tends to be somewhat autonomous from political pressure and to have an established mechanism for recruitment and training. Countries that lack the cushioning effect of a strong bureaucracy receive low points because a change in government tends to be traumatic in terms of policy formulation and day-to-day administrative functions.

Econometric Modelling

In this study we employ the PMG estimation framework introduced by Pesaran, Shin, and Smith (1999), henceforth PSS. It is assumed that an autoregressive distributive lag, $ARDL(p, q_1, ..., q_k)$ can be represented as follows:

$$\Delta y_{it} = \phi_i (y_{i,t-1} - \beta_i x_{i,t-1}) + \sum_{j=1}^{p-1} \lambda_{ij} y_{i,t-j} + \sum_{j=0}^{q-1} y_{i,j} x_{i,t-j} + \mu_i + u_{it} \quad (1)$$

Where y_{it} is a scalar dependent variable (FDI), x_{it} is the k x 1 vector of regressors (institution variables) for group i, μ_i represent the country specific-effects (fixed effects), ϕ_i is a scalar coefficient on the lagged dependent variable, β_t's is the k x 1 vector of coefficients on explanatory variables (institution variables), λ_{ij}'s are scalar coefficients on lagged first-differences of dependent variables, and $y_{i,j}$'s are k x 1 coefficient vectors on first-difference of explanatory variables and their lagged values. We assume that the disturbances u_{ij}'s are independently distributed across i and t, with zero means and variances $\delta^2 \rangle 0$. Further assuming that $\phi_i \langle 0$ for all i and therefore there exists a long-run relationship between y_{it} and $x_{i,t}$:

$$y_{it} = \theta'_{ij} x_{ij} + \eta_{ij} \quad i = 1,2,...N; t = 1,2,...,T \quad (2)$$

Where $\theta'_{ij} = -\frac{\beta_t'}{\phi_i}$ is the k x 1 vector of the long-run coefficients, and η_{ij}'s stationary with possibly non-zero means (including fixed effects). Equation (1) can be rewritten as VECM system as:

$$\Delta y_{it} = \phi_i \eta_{i,t-1} + \sum_{j=1}^{p-1} \lambda_{ij} \Delta y_{i,t-1} + \sum_{j=0}^{q-1} y_{i,j} \Delta x_{i,t-j} + \mu_i + u_{it} \quad (3)$$

Where $\eta_{i,t-1}$ is the error correction term given by (3), hence ϕ_i is the error correction coefficient measuring the speed of adjustment towards the long-run equilibrium.

The Pooled Mean Group (PMG) estimator proposed by Pesaran et al. (1999) restricts the long-run coefficients to be equal over the cross-section, but allows for the short-run coefficients and error variances to differ across groups on the cross-section; that is, $\theta_i = \theta$ for all i. The hypothesis of homogeneity of the long-run policy parameters cannot be assumed a priori and is tested empirically in all specifications by a Hausman-type test (Hausman, 1978). The group-specific short-run coefficients and the common long-run coefficients are computed by pooled maximum likelihood estimation.

EMPIRICAL RESULTS

This section reports the result of the Pool Mean-Group estimation and the Hausman test (Table 1 and Table 2). It should be noted that in PMG estimation, the long-run coefficients are constrained to be the same across countries, while the short-run coefficient are allowed to vary.

TABLE 1: Pool Mean Group Estimation of ARDL (2,2,2,2,2)

Dependent Variable(*fdi)*	**Coefficient**	**Z-Statistic**	**Probability**
Long run results			
inv_{t-1}	0.3501 (0.0444)	7.88***	0.000
con_{t-1}	0.2758 (0.4334)	6.36***	0.000
dem_{t-1}	-0.0373 (0.1179)	-0.32	0.751
bur_{t-1}	2.2406 (0.2677)	8.37***	0.000
mil_{t-1}	-0.1304 (0.0648)	-2.01	0.044
Short run results			
ECT	-0.4902 (0.1077)	-4.55***	0.000
Δinv_{t-1}	0.4066 (0.3045)	1.34	0.182
Δinv_{t-2}	-0.0341 (0.2269)	-0.15	0.881
Δcon_{t-1}	-0.1032 (0.2021)	-0.51	0.610
Δcon_{t-2}	0.1069 (0.2230)	0.48	0.632
Δdem_{t-1}	-1.0210 (1.2901)	-0.79	0.429
Δdem_{t-2}	-1.0792 (1.0436)	-1.03	0.301
Δbur_{t-1}	-0.0562 (1.7844)	-0.03	0.975
Δbur_{t-2}	-0.2008 (1.5088)	-0.13	0.894
Δmil_{t-1}	-1.2827 (1.5142)	-0.85	0.397
Δmil_{t-2}	-1.8178 (0.9438)	-1.93	0.054
No. Countries	14		
No. Observations	321		
Log likelihood	454.573		

Note: *** indicate significance at the 1% level; ** at the 5% level; and* at the 10% level. Standard errors are in parentheses.
Dependent variable: Foreign Direct Investment (fdi)
Independent variable: Investment Profile (inv), Internal Conflict (con), Democratic Accountability (dem), Bureaucracy Quality (bur) and Military in Politics (mil)

Table 1 present the result of Pool Mean Group Estimation using ADRL (2, 2, 2, 2, 2). The table shows the long-run and short-run coefficients between FDI and institutions variables, and the speed of adjustment. In the long run,as can be seen the results show that there are three institutions variables namely investment profile, internal conflict, and bureaucracy quality are positively and statistically significance at 1 per cent in influencing the inflow of FDI. Base on the result it shows that a 1 per cent improves in investment profile will generate around 0.35% FDI to MENA countries and 1 per cent in reducing the internal conflict can increase 0.27% FDI to MENA countries. Besides that, 1 per cent increase in the bureaucracy quality lead to increase the inward FDI to MENA countries around 2.24%.Thus, based on these finding, the policy maker can promote the inflow FDI in MENA countries by improving their quality of institutions through an improving in investment profile, reducing the internal conflict and improving the bureaucracy quality at the long run. The speed of the adjustment reflected by the coefficient of convergence is about -0.49 and it is always negative and significant, indicating that there is no omitted variable bias. However, in the short-run, all institutions variables are not statistically significance in influencing the inflow of FDI. This finding signals that foreign investor will only consider the important of institution variables to FDI in the long run.

Table 2: Mean group and Poole Mean Group Estimation

Variables	MG Estimation		PMG Estimation	
	Coefficients	S.E	Coefficients	S.E
inv	-0.2965	0.3529	0.3501***	0.0444
con	0.0624	0.3321	0.2758***	0.0433
dem	-0.6174	0.6837	-0.0374	0.1179
bur	-1.5058	2.1737	2.2406***	0.2677
mil	-1.0550	0.9908	-0.1304	0.0648

Note: *** significance at 1% level; ** at 5% level; and* at 10% level.

Table 2 reports the Hausman test for testing the hypothesis of the long-run elasticity's to be equal across all panel as stipulated by PMG model. Based on the calculated Hausman statistic is 3.70 and is distributed $x^2(5)$.Hence, we conclude that the PMG estimator, the efficient estimator under the null hypothesis, is preferred.There is strong evidence that most variables are positively influence the inflow FDI at significant at least at 1 percent significant level.

SUMMARY AND CONCLUSIONS

It is widely accepted that the quality of institutions plays an important role in attracting the foreign direct investment. Thus, this paper provides a noble contribution by investigating the relevance of the quality of institutions upon the inflow of FDI in selected MENA countries using panel ARDL model, or Pooled Mean Group (PMG) estimation.

The main findings can be summarized as follow: First, there are three institution variables (namely, investment profile, internal conflict, and bureaucracy quality) are statistically significance upon the inflow of FDI in MENA countries in the long run. Second, in the short-run none of the institutional variables have significant impact on the FDI inflow to MENA. One of the possible explanation is the foreign investors have concerned to the long-term FDI, thus they need to observe the quality of institutions variables in the long-run rather than short-run. This is because the quality of institutions in the long run will affect their business operation and profit margin in the long run. The result also implied that those institutional reforms should more concentrate on the factor which reduces the risk to investment, political violence, and the strength of bureaucracy.

However, this paper is not without its limitations, in which it needs further investigation. This paper only focus on the effect of quality of institutions on FDI inflow to MENA countries, without considering other control variables such as well-developed financial system (financial deepening), favorable growth performance, high trade openness, excellent infrastructure development, low country risk as well as attractive fiscal and monetary incentive. Therefore, further study should consider testing the hypothesis that the interaction between institutional quality and other macro variables has a separate influence on the FDI inflow to the host countries.

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