Institutions and foreign direct investment (FDI) in Malaysia: empirical evidence using ARDL model

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Abstract

Since 1990's, institution factors have been regarded as playing important roles in stimulating foreign direct investments (FDI). However, empirical studies on their importance in affecting FDI are still lacking especially for small open economies. This paper attempts to investigate the role of institutions upon the inflow of foreign direct investment (FDI) in a small open economy of Malaysia. Using bounds testing approach (ARDL model), the empirical findings reveal that there exists a long run relationship among FDI and the institution variables. Specifically, several institution variables namely government stability, bureaucracy, and corruption are found to play prominent roles in influencing the inflow of FDI. Thus, in attracting foreign investors, implementing FDI-friendly policies by providing and maintaining the quality of domestic institutions would be beneficial to Malaysian economic growth.

Keyword: Institutions; Foreign Direct Investment (FDI); ARDL

1. Introduction

It is generally accepted that Foreign Direct Investment (FDI) has a favorable impact as a key driver in promoting long run economic growth, particularly for the less-developed countries (LDC's), which have experienced a shortage of capital accumulation for their development. Verdier (2008) argues that domestic savings are linked with capital inflows where low savings rate attracts more inflows of capital. Indeed, most of the LDC's which have effectively attracted

more FDI have undergone a persistency in their economic growth. Thus, most of the LDC's are highly dependent on FDI as an engine of economic growth and have been trying to attract foreign investors particularly from Multinational Enterprises (MNE's) by reducing barriers to FDI and offering various tax incentives and subsidies (Herzer, 2008). As a result, most of the LDC's have been competing with each other in order to attract investment from MNE's, particularly the foreign investors from the advanced nations.

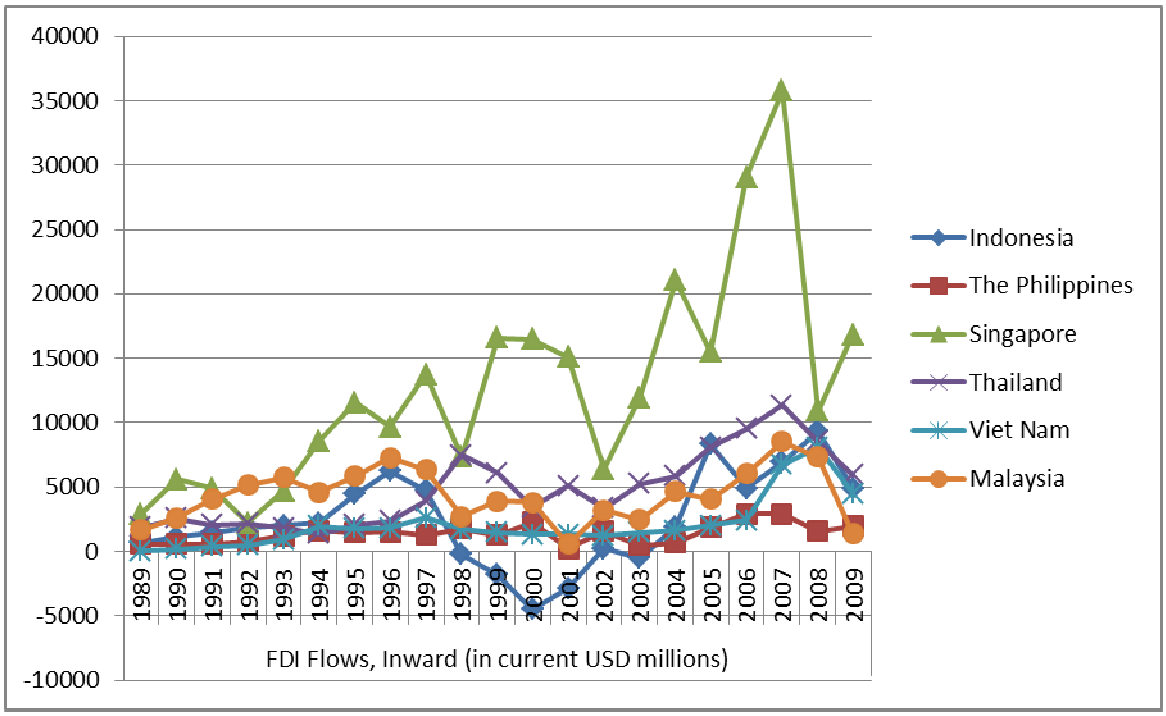
There is consensus among academic economists that FDI has a positive effect on economic growth. The significant effect of FDI on economic growth has motivated many researchers to study the main factors that determine the inflow of FDI across countries. The most important factors that determine the inflow of FDI are domestic market size, trade openness, cost of labour, 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. 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.

In Malaysian economy, FDI has been seen as a key driver in promoting the economic growth through export oriented industry. Policy reforms, including the introduction of the Investment Incentive Act in 1968, the establishment of free trade zones in the early 1970s, and the provision of export incentives alongside the acceleration of open economy in the 1980s have led to surge of FDI in the late 1980s (Ang, 2008, 2009). Apart from these policy factors, it is generally believed that sound macroeconomic management, sustained economic growth, and the

presence of a well functioning system, political stability, relatively low set-up costs, and a sufficiently trained labour cost have made Malaysia an attractive prospect for FDI.

Figure 1: FDI inflows of Malaysia and neighbouring countries, 1989 – 2009 (USD Mil.)



Source: United Nations Conference on Trade and Investment, Foreign Direct Investment Database.

As can be seen in Figure 1, Malaysia experienced large FDI inflows as compared to its neighbours countries during early 1990s. This success was contributed by policy reforms that have taken place as early as 1968. In 1992, Malaysia received large amount of FDI, even higher than Singapore. However, after the 1997-1998 Asian financial crisis, Malaysia started losing to its neighbouring competitors. Thailand overtook Malaysia in 1998, then in 2005, Malaysia lost to Indonesia. Unfortunately, in 2009, all other countries won over Malaysia in attracting FDI.

In term of macroeconomic conditions, Malaysia is relatively better than other neighbouring countries except Singapore. This indicates that policy variables and sound macroeconomic conditions are inadequate in explaining the inflow of FDI. Indeed, good institutions are believed to have positive influences on economic development through the promotion of domestic as well as foreign investments. Thus, it is expected that the quality of institutions play a vital role in attracting the inflow of FDI into Malaysia.

This paper contributes to the existing literature in three ways. First, this paper examines the determinants of FDI inflow in Malaysia by focusing on several institution variables namely law and order, government stability, corruption, bureaucracy, and investment profile. Although Ang (2008) and Marial and Ngie (2009) have studied the determinants of FDI in Malaysia, none of them have considered the role of institution variables in their model. Better understanding of the role of institutions would be helpful to Malaysian leaders and policy makers so that appropriate actions can be taken in sustaining and encouraging the inflow of MNEs. Second, this paper uses a recent econometric technique, namely ARDL or bounds testing procedure proposed by Pesaran et al. (2001). The method is sufficient enough to deal with a short sample size, and it also allows a mixture of time series variables of I(0) and I(1) to be collectively estimated. Third, many previous studies investigate the role of institution by using cross sectional data or panel data methodology (see for example Busse and Hefeker (2007), Quere et al. (2007)). These techniques however, limit our understanding on the effect of institutions on individual country. Our study on Malaysia will thus shed some light on the importance of institutions in affecting FDIs for a small open economy. Our findings reveal that, there exist a long-run relationship among the FDI inflows and the institutional variables. Several institutional variables such as government stability, bureaucracy, and corruption are found to play important roles in influencing the inflow of FDI.

The structure of this paper is organized as follow. Section 2 provides a short review of the literature by focusing on the role of institutions variables on FDI. Section 3 presents the econometric methodology by focusing on definitions of the variables of interest as well as the ARDL model. The empirical results are discussed in Section 4, and finally Section 5 summarizes and concludes.

2. Literature Review

The literature relating to institutions and FDI is mainly connected to the study of the impact of the quality of institutions on FDI inward flows. An early study on this issue has been examined by Wheeler and Mody (1992) for the case of U.S firms. They investigated 13 components of risk factors (including bureaucracy, political stability, corruption, and the legal system quality), but do not find any significant impact of the quality of institutions upon the location of U.S foreign affiliates. According to Schmieding (1993), institutions encompass not only bureaucracies and administration, but also more importantly, the entire body of formal laws, rules and regulations as well as the informal conventions and patterns of behavior that constitute the non-budget constraint under which economic agents can pursue their own individuals ends. In addition, the quality of institutions are closely related to reducing information asymmetries, as a high quality institution channels information about market conditions, goods and participants, which in turn can encourage investment, either domestic or foreign. Indeed, the deeper understanding of the role of institutions in stimulating the inflow of FDI is pivotal for the developing countries in order to design an appropriate FDI-friendly policy.

Other empirical studies have supported the importance of institution variables in affecting the FDI. Wei (1997, 2000) for instance, found that uncertainty about corruption has negative effects on FDI location. This is due to the fact that corruption will incur additional cost of doing business because the investors have to bribe official in order to get licenses and permits. Besides corruption, Busse and Hefeker (2007) also found that government stability, internal and external conflict, ethnic tensions, law and order, democratic accountability of government, and quality of bureaucracy are highly significant in determining the foreign investment inflows in the sample of 83 developing countries. Kaufman et al. (1999) showed that five out of six governance indicators such as political instability and violence, government effectiveness, regulatory burden, rule of law and graft play a vital role in attracting the inward FDI. Brunetti and Weder (1998) have found that there is a negative link between institutional uncertainty and private investment. In comparison, Lee and Mansfeild (1996) have found a positive relationship between FDI and intellectual property protection. Du et al. (2008) found that U.S multinational prefer to invest in China's region that have better protection of intellectual property rights, lower

degree of government intervention in business operation, lower level of government corruption, and better contract enforcement. Using a wider range of institution variables, Daude and Stein (2007) showed that inward FDI is significant influenced by the quality of institutions.

In the Malaysian context, studies relating to the determinants of FDI have been done by Ang (2008), and Marial and Ngie (2009). Ang (2008) found that increases in the level of financial development, infrastructure, and trade openness promote FDI. On the other hand, higher statutory corporate tax rate and appreciation of the real exchange rate appear to discourage FDI inflows. The results also suggest that higher macroeconomic uncertainty induces more FDI inflows. In comparison, Marial and Ngie (2009) found that in the long run, the inflow of FDI in Malaysia is positively influenced by real exchange rate, GDP growth, and infrastructure, and negatively influenced by exports.

Despites of many studies on the determinants of FDI in Malaysia, none of them have considered the role of institution variables in affecting the inflow of FDI. We provide a novel contribution to the existing literature by presenting the first empirical evidence in small open economy (i.e. Malaysia). Specifically, we investigate the role of institutional quality namely the law and order, government stability, bureaucracy, corruption, and investment profile in influencing the inflow of FDI.

3. Estimation Methods

3.1 Data and the Definition of Variables

The data used in this study are yearly frequency spanning from 1984 until 2009. The aggregate inflow of FDI data set is collected from IFS database, while the data for institution variables are found from International Country Risk Guide (ICRG) database. The data of FDI are transformed into natural logarithm, whereas, the data of institutional variables are kept in percentage point (in level form). We do not include common factors that influence FDI as studied by Ang (2008) and Marial and Ngie (2009) for two reasons. First, our concern is specifically on the role of institutions on FDI inflow that previously are often ignored. The importance of the common factors is well established. Concentrating on those variables would shed some light on the

importance of the variables. Second, putting all other variables together with institution factors may cause multi-collinearity problem where the institutional variables may be correlated with other macroeconomic variables such as high levels of human capital, open market and advanced financial intermediaries (Papaioannou, 2009).

Institutions Variables

This study considers five political risk components, namely government stability, investment profile, corruption, law and order, and bureaucracy quality in investigating the importance of institution variables in affecting the inflow of FDI into Malaysia. These variables are measured using points. Each indicator is scaled either from 0 to 12 points, 0 to 6 points, and 0 to 4 points, which are the highest value indicating better institution and less political risk. Specifically, the detailed definition and the explanation of the institutions variables are as follow:

(i) Government stability-12 points

This measures an assessment both of the government's ability to carry out its declared program, and its ability to stay in office. The risk rating assigned is the sum of the three components, each with a maximum score of four points, and a minimum score of 0 point. A score of four points equates to very low risk, and score of 0 points to very high risk. The subcomponents are government unity, legislative strength, and popular support.

(ii) Investment Profile – 12 points

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

(iii) Corruption - 6 points

Corruption is a threat to foreign investment for several reasons. First, it distorts the economic and financial environment. Second, it reduces the efficiency of government and business by enabling people to assume positions of power through patronage rather than ability, and third, it

introduces an inherent instability into political process. Such corruption can make it difficult to conduct business effectively, and in some cases may force the withdrawal or withholding of an investment. The high points indicate less corruption, and less political risk to the investors.

(iv) Law and order – 6 points

To assess the 'Law' element, the strength and impartially of the legal system are considered, while the 'Order' element is an assessment of popular observance of the law. Thus, a country can enjoy a high rating '3' in terms of its judicial system, but low rating '1' if it suffers from a very high crime rate if the law is routinely ignored without effective sanction.

(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.

3.2 Econometric Modeling

In order to examine long run relationship and dynamic interaction among FDI and institutions, this study employs an ARDL model. In general, there are three steps in estimating the model. The first step is to estimate the long-run relationship among the variables. This is done by testing the significance of the lagged levels of the variables in the error correction form of the underlying ARDL model. Our ARDL model can be written as follows;

$$\Delta LFDI_t = \alpha_0 + \beta_1 LFDI_{t-1} + \beta_2 LAWOR_{t-1} + \beta_3 CORRUPT_{t-1} + \beta_4 BEREAU_{t-1} + \beta_5 GSTAB_{t-1} + \beta_6 INVPRO_{t-1} + \sum_{i=1}^{p} \delta_1 \Delta LFDI_{t-i} + \sum_{i=0}^{q} \delta_2 \Delta LAWOR_{t-i} + \sum_{i=0}^{r} \delta_3 \Delta CORRUPT_{t-i} + \sum_{i=0}^{s} \delta_4 \Delta BUREAU_{t-i} + \sum_{i=0}^{t} \delta_5 \Delta GSTAB_{t-i} + \sum_{i=0}^{u} \delta_6 \Delta INVPRO_{t-i} + \varepsilon_t \quad [1]$$

where, *LFDI* is log of FDI, *LAWOR* is law and order, *CORRUPT* is corruption, *BUREAU* is bureaucracy, *GSTAB* is government stability, and *INVPRO* is the investment profile. The selection of the optimum lagged orders of the ARDL model are based on Akaike information criteria. In order to test cointegration among the variables, the Wald F-statistics for testing the joint hypotheses has to be compared with the critical values as tabulated by Pesaran et al. (2001).

The joint hypotheses to be tested are;

$$H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$$
$$H_1 : \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq \beta_6 \neq 0$$

If the F-statistics is higher than the upper bound critical value, the null hypothesis (H_0) is rejected, indicating that there is a long run relationship between the lagged level variables in the model. In contrast, if the F-statistic falls below the lower bound, then the H_0 cannot be rejected and no long run relationship exists. However, if the F-statistics falls in between the upper bound and lower bound critical values, the inference is inconclusive. At this condition, the order of integration of each variable should be determined before any inference can be made.

In the second step, once the cointegration is established, the conditional $ARDL(p,q,r,s,t,u)$ long-run model of the determinants of the $LFDI_t$ can be estimated as below:

$$LFDI_t = \alpha_0 + \sum_{i=1}^{p} \beta_1 LFDI_{t-i} + \sum_{i=0}^{q} \beta_2 LAWOR_{t-i} + \sum_{i=0}^{r} \beta_3 CORRUPT_{t-i} + \sum_{i=0}^{s} \beta_4 BUREAU_{t-i}$$
$$+ \sum_{i=0}^{t} + \beta_5 GSTAB_{t-i} + \sum_{i=0}^{u} \beta_6 INVPRO_{t-i} + \varepsilon_t$$

[2]

In the final step, we obtain the short-run dynamic parameters by estimating an error correction model associated with the long run estimates. This is specified as follow;

$$\Delta LFDI_t = \varphi_0 + \nu_1 ECM_{t-1} + \sum_{i=1}^{p} \phi_1 \Delta LFDI_{t-i} + \sum_{i=0}^{q} \phi_2 \Delta LAWOR_{t-i} + \sum_{i=0}^{r} \phi_3 \Delta CORRUPT_{t-i}$$
$$+ \sum_{i=0}^{s} \phi_4 \Delta BUREAU_{t-i} + \sum_{i=0}^{t} + \phi_5 \Delta GSTAB_{t-i} + \sum_{i=0}^{u} \phi_6 \Delta INVPRO_{t-i} + \varepsilon_t$$

[3]

where, $\phi_1, \phi_2, \phi_3, \phi_4, \phi_5, \phi_6$ are the short-run dynamic coefficients of the model's convergence to equilibrium, and ν is the speed of adjustment. The expected signs for all the institution variables are positive, which indicates that better quality institutions will stimulate more foreign investments.

4. Empirical Results

In this section, we report the results of long-run relationship of the ARDL model (Table 1 and 2) as well as the long run and short run determinants of FDI (Table 3 and 4). The empirical results are crucial in explaining the role of the institution variables on FDI inflow in Malaysia.

Table 1: Estimation of $ARDL(2,2,1,1,2,2)$ **model**

I. Estimated Model			
Variable	Coefficient	t-Statistic	Probability
$LFDI_{t-1}$	*2.236*	*1.936**	*0.094*
$LAWOR_{t-1}$	-3.553	-3.088**	0.018
$CORRUPT_{t-1}$	0.874	2.415**	0.046
$BEREAU_{t-1}$	6.656	2.751**	0.028
$GSTAB_{t-1}$	-1.034	-2.366**	0.049
$INVPRO_{t-1}$	-1.937	-2.018*	0.083
$\Delta LFDI_{t-1}$	-2.594	-3.163**	0.016
$\Delta LFDI_{t-2}$	-1.370	-2.427**	0.046
$\Delta LAWOR_{t-1}$	1.154	0.742	0.164
$\Delta LAWOR_{t-2}$	4.336	3.362**	0.012
$\Delta CORRUPT_{t-1}$	4.116	3.270**	0.014
$\Delta BEREAU_{t-1}$	-0.912	-1.373	0.212
$\Delta GSTAB_{t-1}$	0.751	2.404**	0.047
$\Delta GSTAB_{t-2}$	0.596	1.481	0.182
$\Delta INVPRO_{t-1}$	0.304	0.999	0.351
$\Delta INVPRO_{t-2}$	-0.081	-0.361	0.728
II. Model Criteria/Goodness of Fit			
$R^2 = 0.836$ Adjusted $R^2 = 0.484$ F-statistics = 5.64(0.034)**			
III.Diagnostic Checking			
AR(2)=0.678(0.545) AR(4)=0.378 (0-775)			
ARCH (2)= 2.288 (0.130) ARCH (4)=1.935 (0.160)			
JB=2.723 (0.255) RESET =3.072 (0.153)			

Note: * and ** indicate significance at 10% and 5% significance level, respectively. Probability values are quoted in brackets. AR(i) and ARCH (i) for i=2,4 denote LM-type Breusch-Godfrey Serial Correlation LM and ARCH test, respectively to test for the presence of serial correlation and ARCH effects at lag i. JB and RESET stand for Jarque-Bera normality test, and Ramsey Regression specification error test, respectively.

Table 1 shows the estimation results of equation (1) using $ARDL(2,2,1,1,2,2)$. The R-square indicates that 83.6 percent of the variation in the response variables can be explained by the institution variables. The robustness of the model is confirmed by several diagnostic tests such as Breusch-Godfrey serial correlation LM test, ARCH test, Jacque-Bera normality test, and Ramsey RESET specification test. All the tests reveal that the model has the desired econometric properties, such that it has a correct functional form and the model's residuals are serially uncorrelated, normally distributed and homoskedastic. Therefore, the results reported are valid for reliable interpretation.

Table 2: Bounds Test for Cointegration Analysis

Critical Value (k=6)	Lower Bound Value, I(0)	Upper Bound Value, I(1)
10%	2.12	3.23
5%	2.45	3.61
1%	3.15	4.43

Notes:
The computed F-Statistics in the estimation model in equation (1) is 3.54 (significant at 10 percent significance level). Critical values are cited from Pesaran et al. (2001), Table CI(iii), Case III (unrestricted intercept and no trend).

In Table 2, the results of the bound cointegration test show that the null hypothesis of $H_0 : \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$ against its alternatives $H_0 : \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 = \beta_6 = 0$ is rejected at the 10 percent significance level. The computed F-statistics of 3.54 is greater than the upper bound value of 3.23 at 10 percent significance level. This indicates that there exists a long-run relationship among the FDI and the institutions variables (law and order, corruption, government stability, investment profile, and bureaucracy).

The second step is to estimate the long run model of the determinants of FDI. Table 3 reports the estimation results. As can be seen, three institutional variables, namely corruption, government stability, and bureaucracy are positively and statistically significant at least at 5 percent significance level in influencing the inflow of FDI. This indicates that, in the long run, the level of corruption, government stability, and bureaucracy in Malaysia would affect the inflow of foreign investments to Malaysia. These findings send important signals to leaders and policy makers of the country. Thus, it is imperative for them to offer better quality domestic institutions by minimizing the element of corruption, maintaining or increasing the government

stability, and reducing the government bureaucracy in order to attract more inflow of foreign investments.

Table 3: Estimation of Long Run Coefficients

Regressors	Coefficient	Standard Error	t-ratio	Probability
$LFDI_{t-1}$	0.110	0.210	0.523	0.607
$LAWOR_{t-1}$	0.343	0.214	1.597	0.127
$CORRUPT_{t-1}$	0.570	0.243	2.333**	0.031
$BEREAU_{t-1}$	1.198	0.364	3.288***	0.004
$GSTAB_t$	0.134	0.063	2.130**	0.047
$INVPRO_t$	0.128	0.152	0.839	0.412
R-square	0.692			
Durbin-Watson	2.193			
F-statistics	6.745			
Prob (F-Statistics)	0.000			

Note:
ARDL (1,1,1,1,0,0) lag for each variable is selected based on AIC. Dependent variable is LFDI
***, **, * is significance level at 1%, 5%, and 10% respectively. The results of unit root tests are discussed in the appendix.

Table 4: Estimation of Short-Run (VECM) Model

Regressors	Coefficient	Standard Error	t-ratio	Probability
ECM_{t-1}	-1.253	0.293	-4.265***	0.001
$\Delta LFDI_{t-1}$	0.107	0.214	0.500	0.623
$\Delta LAWOR_{t-1}$	-0.273	0.234	-1.169	0.260
$\Delta CORRUPT_{t-1}$	0.779	0.537	1.451	0.166
$\Delta BEREAU_t$	1.049	0.500	2.098*	0.052
$\Delta GSTAB_t$	0.264	0.100	2.641**	0.018
$\Delta INVPRO_t$	-0.193	0.143	-1.351	0.195
R-Square	0.678			
Durbin-Watson	1.937			
F-Statistic	4.816			
Prob (F-statistics)	0.004			

Note:
ARDL (1,1,1,0,0,0) lag for each variable is selected based on AIC. Dependent variable is ΔLFDI
***, **, * is significance level at 1%, 5%, and 10% respectively.

Table 4 reports the estimation results of the short-run model using $ARDL(1,1,1,1,0,0)$. As shown, only two variables, namely bureaucracy and government stability are positively and statistically significant at least at 1 percent significance level in influencing the inflow of FDI. The ECM variable which explains the speed of the adjustment is also significant at 1 percent significance level. This indicates that there is a long run causality from institution variables to the inflow of FDI.

5. Summary and Conclusion

Although the determinants of FDI have been examined extensively in the previous studies, less attention has so far been given to examining the role of institutional variables upon FDI inflows; particularly in a small open economy (i.e. Malaysia). This paper extends the existing literature by providing new empirical evidence about the role of quality of institution on FDI inflow. Specifically, we examine the role of institutional factors, namely corruption, government stability, bureaucracy, law and order, and investment profile in affecting the FDI inflow in Malaysia. Considering the short annual sample size, the ARDL or bound testing procedure is used to examine the long run relationship and the causality direction (long run, and short run) among the variables of interest.

The main findings can be summarized as follows. First, there is a long-run relationship among institutional variables and FDI inflow to Malaysia. Second, in the long-run and short run, several institutional variables namely government stability, the level of corruption, and bureaucracy are statistically significant in influencing the inflow of FDI.

The findings would be of concern to Malaysian leaders and policy makers. Maintaining government stability has to be given high priority as this will not only lead to better management of the country but it also attracts foreign MNEs to come in and do business. In the long run, this supports Malaysian economic growth. In addition Malaysian government must also reduce or even eliminate the level of corruption in the country as high level of corruption has been proved to deter foreign investments. Moreover, eliminating bureaucracy that hinders the prospects of

FDI growth in Malaysia can be another strategy that can be implemented. In summary, offering sound and quality institutions in Malaysia should be a must. This is because sound and quality institutions create a FDI-friendly environment, and in turn stimulate continuous inflows of FDI. As Malaysia is losing to its neighbours in attracting new FDI, the above mentioned actions seem to be urgent, otherwise Malaysia will be left behind in the near future.

This study is not without its limitations. First, as mentioned earlier, explaining the determinants of FDI inflow usually involve macro variables such as a 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. We do not control these variables as the use of these variables will only add to the list of independent variables. Using too many parameters in the model will result in the loss of degree of freedom. In addition, this study does not take into account other important institutions variables which can also influence the behavior of foreign investment. For instance, a good property right protection, a good quality of education system, no risk of expropriation and dimensions of market efficiency are also important and should be considered precisely by the government. Second, an institutional variable is often inadequate to explain the behavior of MNE's. Therefore, a good interaction between institutional variables and other macro variables such as a 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 are also vital in order to attract the inflow of FDI to the host countries. In fact, all these variables are complementary to each other. For instance, quality of institutions has no meaning if the host countries (particularly LDC's) do not have a well-developed financial system, excellent infrastructure and other sound environment in order to maintain the inflow of foreign investment. 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.

References

Ang, J.B. (2008). Determinants of foreign direct investment in Malaysia. Journal of Policy Modelling, 30, 185-189.

Ang, J.B. (2009). Financial development and the FDI-growth nexus: the Malaysian experience. Applied Economics, 41, 1595-1601.

Brunetti, A. and Weder, B. (1998). Investment and institutional uncertainty : a comparative study of difference uncertainty measures. *Weltwirtschaftliches Archiv* 134, 513-533.

Busse, M. and Hefeker, C. (2007). Political risk, institution and foreign direct investment. *European Journal of Political Economy*, 23, 397-415.

Daude, C. and Stein, E. (2007). The quality of institutions and foreign direct investment. *Economics & Politics*, vol. 19, 317-344.

Du, J., Lu, Y., and Toa, Z. (2008). Economic institutions and FDI location choice: Evidence from US multinational in China. Journal of Comparative Economics, 36, 412-429.

Herzer, D., Klasen, S. and Nowark-Lehmann, D. F. (2008). In the search of FDI-led growth in developing countries: The way forward. *Economic Modelling* 25(5), 793-810.

Kaufmann, D., A. Kraay, and P. Zoido-Lobaton. (1999). Governance matters. *World Bank Policy Research Working Paper,* 2196, Washington, DC.

Lee, J-Y. and Mansfield, E. (1996). Intellectual property protection and U.S foreign direct investment. *Review of Economics and Statistics* 78, 181-186.

MacKinnon , J. G. (1994). Approximate asymptotic distribution functions for unit root and cointegration tests. Journal of Business and Economic Statistics, 12(2), 167-176.

Maria, A. Y. and Ngie, T.T. (2009). Estimating the domestic determinants of foreign direct investment flows in Malaysia : Evidence from cointegration and error-correction model. Jurnal Pengurusan, 28, 3-22.

Papaioannou, E. (2009). What drives international financial flows? Politics, institutions and other determinants. *Journal of Development Economics* 88, 269-281.

Pesaran, M. H., Y. Shin and R.P. Smith. (2001). Bounds testing approaches to the analysis of level relationship. Journal of Applied Econometric, 16, 289-326.

Quere, B.A., Coupet, M. and Mayer, T. (2007). Institutional Determinants of Foreign Direct Investment. *The World Economy*, 764-782.

Schmieding, H. (1993). From plan to market: on the nature of the transformation crisis. *Weltwirtschaftliches Archiv* 129, 216-253.

Verdier, G. (2008). What drives long-term capital flows? A theoretical and empirical investigation. *Journal of International Economics* 74, 120-142.

Wei, S-J. (1997). Why is corruption so much more taxing than tax? Arbitrariness kills. NBER Working Paper 6255.

Wei, S-J. (2000). How taxing is corruption to international investors? *Review of Economics and Statistics* 82, 1-11.

Wheeler, D. and Mody, A. (1992). International investment location decisions: the case of U.S firms. Journal of International Economics 33, 57-76.

Appendix

Table A1: Results of the Unit Root Tests

Panel A: Level form, I(0)				
	ADF		Philip-Perron (PP)	
Variable	Constant and no trend	Constant and with trend	Constant and no trend	Constant and with trend
LFDI	-2.026 (1)	-3.109 (4)	-2.234 (2)	-2.177 (1)
CORRUPT	-1.694 (1)	-2.247 (2)	-1.439 (2)	-2.080 (2)
LAWOR	-4.863*** (3)	-4.711*** (3)	-2.163 (3)	-2.092 (2)
BUREAU	-1.520 (4)	-3.586* (3)	-1.559 (2)	-2.142 (1)
GSTAB	-3.209*** (5)	-2.264 (2)	-1.680 (2)	-1.641 (1)
INVPRO	-1.973 (1)	-4.307** (1)	-1.639 (2)	2.922 (2)
Panel B : First Difference, I(1)				
LFDI	-3.522** (2)	-3.602* (1)	-5.718*** (2)	-5.720*** (1)
CORRUPT	-3.284** (1)	-2.498 (2)	-4.576*** (1)	-4.643*** (1)
LAW	-2.965* (1)	-6.235*** (4)	-3.156** (3)	-3.195 (1)
BUREAU	-3.052** (2)	-3.142 (1)	-4.326*** (1)	-4.364** (1)
GSTAB	-3.640** (1)	-3.646 (1)	-3.638** (2)	-3.680** (1)
INVPRO	-4.033*** (1)	-3.943** (2)	-3.892*** (2)	-3.859** (2)

Note: Number in parenthesis is the optimum lag based on Akaike information criteria (AIC). The null hypothesis is that the series is non-stationary, or contains a unit root. The rejection of the null hypothesis for both ADF and PP tests is based on the MacKinnon (1994) critical value.Critical values for the ADF and PP test without a trend are: -3.75, -3.00 and -2.62 at the 1%, 5% and 10% significance levels respectively. Critical values for the ADF and PP test with a trend are: -4.38, -3.60 and -3.24 at the 1%, 5% and 10% significance levels, respectively. ***, **, and * denotes the rejection of the null at 1%, 5%, and 10% respectively.

Table A1 reports the results of unit root tests of Augmented Dickey-Fuller (ADF) and Philips-Perron (PP). Based on ADF test, three institutional variables, namely law and order (LAWOR), government stability (GSTAB), and investment profile (INVPRO) are stationary at level form at least at 5 percent significance level. However, based on PP, all variables are non-stationary at level form. All series are stationary at first difference form, either with ADF or PP test. Based on ADF test results, applying Johansen procedure to cointegration would not be possible as there is a mixture of I(0) and I(1) series. This provides a rationale for us to use the bound test approach, or ARDL model proposed by Pesaran et al. (2001).