Relationships between Doing Business Indexes and FDI Net Inflows: Empirical Evidence from Six Asian Countries (Afghanistan, Bangladesh, India, Iran, Pakistan and Sri Lanka)

Faridah Shahadan  
Faculty of Economics and Management  
University Kebangsaan Malaysia  
faridahs@ukm.my

Tamat Sarmidi  
Faculty of Economics and Management  
University Kebangsaan Malaysia  
tamat@ukm.my

Faqir Jan Faizi  
Faculty of Economics and Management  
University Kebangsaan Malaysia  
faqir.ahmad@gmail.com

ABSTRACT

The importance of Doing Business Index indicators as a determinant of FDI net inflows has glimmered attention in determining their relationships. The present study intended to explore the relationships between Doing Business indexes and FDI inflow. In this study, the main question to be answered is whether changes in Doing Business Indexes, which are indicating the quality of institutions and regulatory reforms leads to attract FDI inflows. Doing Business is an international report that describes the business environment in various countries, through quantitative and qualitative indicators. These indicators are representing the functioning of countries institutions and strengths. In the current study the econometrics analysis, random effect method has been used to identify the empirical relations and significant areas for attracting FDI net inflows. This study covers six Asian economies which are, Afghanistan, Iran, Pakistan, India, Bangladesh and Sri Lanka for the period 2004-2013. GLS kesian rawak telah digunakan untuk anggaran, secara umum implikasi utama ialah, persekitaran perniagaan yang lebih baik tertinggi adalah lebih cenderung untuk menarik aliran masuk FDI dan semua indeks mempunyai hubungan songsang, kecuali mendaftar hartanah dan mendapatkan kredit. Lebih-lebih lagi kawasan institusi yang paling mungkin untuk mempengaruhi kemasukan pelaburan langsung asing ialah: memulakan perniagaan, mencatatkan harta dan perdagangan mercanti sempadan.

Keywords: FDI inflows, Doing Business Index, Asian Countries, Developing Economies, Institutions.
INTRODUCTION

The growing importance of FDI in the countries’ economy justifies an analysis of costs and benefits of such investment. In this sense, multinationals not only can maximize the benefits, but are able particularly in minimizing the costs. The FDI contributes to higher economic growth through a range of benefits at various levels. These benefits are connected to technology transfers, improved use of its resources, and introduction of new processes, learning-by-observing allowing human capital enhancement, international trade integration and enterprise development. In addition to it the host country can improve the business environment through policies that attract FDI inflows. According to Lougani and Razin (2001) and Feldstein (2000) the presence of foreign firms leads host country to take more rational policies and to contribute to the smooth function of institutions.

Since, FDI has been accepted as positive gauge to the development of a country by most political leaders, there is a demand for knowledge about the characteristics and policies of the country that will attract FDI. Leaders seek not only to encourage trade, but to create the long term relationship that makes FDI distinct from one time export/import contracts. It is suggested that the governments should have rules for the conduct of a business, in order to promote trust in the market. Furthermore, the governments are expected to ensure their presence and to show that they are loyal to the private sectors. This is why, governments are looking for the location advantages that they can augment in order to draw FDI. Governments are struggling to improve policies, roles & regulation and bringing amendments in law for their own benefits and building an easy and safe environment for conducting of businesses and attracting FDI, these improvements are measures by the World Bank’s Doing Business Indexes (DBI). The DBI is an annual survey that is comprises of numerous ‘ease of doing business’ indicators. The DBI scores and ranks countries based on their friendliness towards FDI. Friendliness, however, does not necessarily predict higher levels of FDI. That is why the DBI chart alone cannot explain everything about the actual levels of FDI in each country. The DBI indicators must be compared with other known data about FDI inflows so that a pattern can be found. The World Bank’s (DBI) indicators are all processes or regulations relating to operation of a foreign business entity that the government can directly control. If each country’s change in the level of FDI inflow were to be compared to its DBI score of that year, one could analyze how DBI indicators affect FDI. However, macroeconomic factors, such as high GDP growth rate, high per capita income, human capital that also encourage FDI yet cannot be controlled by the government.

The enabling framework is a very wide idiom which encompasses favorable legislation, an open business culture to foreigners, and valuable national institutions (McMillan, 1993). However, various countries especially the Eastern European transition countries have formed a series of short term incentives; these are not as effective as a properly constructed and supported enabling framework (Johnson, 2006). Johnson concluded that governments should focus on creating an economy environment that is generally welcoming to foreign investors, that’s the market conditions is easy for operations, and the firms knows that special incentives cannot be changed away from their favor rapidly. Agosin and Machado (2007) recognized the most essential overall indicators of FDI as market size, market growth, and the education level of the domestic workforce. However, they have shown that a heartening framework for FDI was not enough to attract FDI by itself. The country also had to have some positive location and well operate institutions advantages to experience FDI inflows. Basically, the purpose of selecting six Asian countries namely, Afghanistan, Pakistan, Iran, India, Sri Lanka, and Bangladesh has significant influence on each other in the region, in the terms of trade, political situation and economic crisis, growth and development, respectively. In this study the ease of doing business index is considered as a part of enabling framework for FDI inflows.

In this paper, we examine the relationships of Doing Business Index indicators for FDI net inflows, for the period 2004-2013. These indicators are indicative of the level of institutions’ quality of a country. These indexes are divided into eleven areas, namely starting a business, dealing with construction permits, registering property, getting credit, strength of investor protection, paying taxes, trading across borders, enforcing contracts, closing a business (or resolving insolvency), employing workers and getting electricity. Due to data unavailability this study does not consider the last two areas.

This paper affirms entirely obviously in various parts, the second part providing the theoretical framework and existing empirical literature review and the importance of the components on FDI, while the third part would describes the data and methodology used for estimation and part four will

---

1 Due to Political Instability, prior to interim Administration of Afghan government was experienced lack of FDI in the country. Meanwhile, relations of Iran government with international community can’t attract FDI as they expecting, if we compared to prior regimes.

2 OLI Paradigm by John Dunning 1988, that is explained in section 2
present the results from regressions estimations, finally the part five will consisting the conclusion and recommendation remarks.

LITERATURE REVIEW

In 1988 John Dunning Introduced OLI paradigm: The OLI paradigm is a technique of judgment where a firm will invest abroad by the existence of certain types of advantages. The advantages are grouped into three categories: Ownership, Location, and Internationalization. Ownership advantages are those possessed by the firm, such as patents and management style, and is transferrable to other countries. Internalization advantages are how the firm uses its ownership advantages and the degree to which they are kept within the firm. Having great internalization advantages will lead a firm to export or conduct FDI to keep activities in-house while low internalization advantages will result in a greater willingness to give licenses away to other firms. Location advantages are the attributes of any particular country that make it attractive to the firm. These, by nature, cannot be transferred so the firm must move operations to that country in order to utilize these advantages. This type of advantage is of the most interest to governments because the location advantages are, to some extent, crafted directly by government activities and are the only component of the OLI paradigm that would make a firm chose one country as opposed to any other.

That is why governments are at glances for the location advantages that they can enhance in order to deals with FDI. This Doing Business Indexes analyzing eleven parts as mentioned above, these areas are comprised from several indicators (variables) which provide a quantitative measure, the degree of bureaucracy in a country into distinguish areas. However, they do not envelop several features of business regulation such as; security determines, macroeconomic stability, corruption, labor skills of the population, specific regulation to foreign investment or quality of infrastructure.

Doing Business is an essential means for assessing the business environment of a country. The large variety of parts covered by the indicators of regulation and the scales of countries, different intensities of capital permits the comparability of different business environments. It permits to establish a relationship between indicators of business environment and levels of economic growth, as well as between the levels of bureaucracy and the poverty, corruption, employment, access to credit and ease of establishing business. In turn, allows identifying the best practices in the countries better ranked that is where it is easier to do business. Finally, give the possibility to define a strategy of reforming the business environment, i.e. the functioning of institutions. Doing Business corresponds to an international instrument on “behavior change” not only to motivate national investors but to attract foreign investors too (Djankov et al, 2002).

Specifically, FDI is an instrument, which is facilitating developing countries to break with their objective and organizational gaps within the beginning of new practices, together managerial and technological. The long-term character of FDI promotes a high compression to the risk perception, political and macroeconomic stability, as well as transparent legal regulations concerning foreign ownership and profit repatriation all are important factors of foreign investment decision making (Demekas et al., 2005 & Resmini, 2000)³.

The majority of earlier studies in this area report two groups of descriptive factors: gravity factors (regulation, proximity, market size) and factor endowments (Capital, Labor). Other factors that are found to have significant effect in this region is geographical proximity exactly at the present, barriers to trade, tax policy and tax incentives, labor costs and regional integration. According to Demekas et al. (2005; 2007) gravity factors explain a large part of FDI inflows, but policy and institutional environment also matter.

Tarzi (2005) analyzed Nigeria, Indonesia, and India’s government efforts to attract FDI and concluded that firms are expected to invest in the countries, where governments are controlling less their operational affairs. These is includes lower corruption, freer capital movement, lower corporate taxes, and permission to own majority stake in a local subsidy. The more procedure and time for operation, the more firms must ‘jump through hoops’ to satisfy the law. These massive numbers of government regulations also cost more for the firm which break and a restraint for FDI inflows into that country.

FDI is not only a main source of exterior capital, but also a contributor to the economic growth and development (De Gregorio, 1992; Guasch, 2002; Harris, 2003; Olivia and Rivera-Batiz, ³ Joong-Wan Cho (2003) points out three key determinants and factors associated with the extent and pattern of FDI in developing host countries: attractiveness of the economic conditions in host countries; the policy framework towards the private sector, trade and industry, and FDI and its implementation by host governments; and the investment strategies of MNEs
2002). The inflows of FDI to selected Asian countries lag behind compared to other regions of the world. Despite, in fact these countries have made significant efforts to attract FDI. Since in the mid-1990s, these countries have taken steps to loosen/liberalizes their economies that are including foreign investment promotions; improvements in the legal and regulatory framework for FDI, removal of entry and foreign-owned restrictions, establishment of investment promotion agencies to publicize business opportunities and international regulation of investments through bilateral investment agreements. Whilst, these countries have introduced other reforms to improve governance, build institutional capacity and strengthen legal and judicial systems (Rosetta Morris and Abdul Aziz, 2011). Some of previous literatures had identified the key determinants of foreign direct investment. The most significant forces are frequently market-based and include gross domestic product, GDP per capita, abundance of natural resources, costs of production, infrastructure and level of corruptions. Another vital feature is the enabling framework, the economic system that governments create in the long term to make foreign investment an attractive outlook in their respective countries. The enabling framework is a very wide idiom encompasses favorable legislation, an open business culture to foreigners, and valuable national institutions (McMillan, 1993).

World Bank a policy research working paper concludes, official Doing Business Rankings enhancements are expected to increase FDI into a country, although enhancements in some determinants of the Doing Business Rankings are certainly correlated with better FDI inflows, it is possibly enhancements in the Doing Business Rankings of the average country that act as a strong signaling effects to investors. Nevertheless, there appears to be no evidence to suggest large improvements in Doing Business Rankings (i.e. ‘reform’ countries) attract significantly greater FDI inflows, while focusing on developing countries in isolation; the relationship is insignificant (World Bank 2011).

**INSTITUTIONAL EFFECTS ON FDI INFLOW**

The institutions factor is an important aspect for developing economies. Poor institutions creates poor infrastructure and expected profitability falls, which causes FDI shrink. It is not so easy to measure impact of institution performance on FDI. Researchers, such as Stiglitz (1999), Kogut and Spicer (2002) induced, that establishment of institutions is as important as good macroeconomic policy. The research of institutional impact on entry mode in transition economies was providing by Henisz (2000) and Meyer (2001). The following topics: choice of entry mode, probability of survival, variety of expansion strategies were researched by several researchers - Henisz (2000), Meyer, (2001a, b), Yiu & Makino (2002) finds, that investors trying to adjust their strategies to local institutions. The several literature shows that World Bank DBI is significantly related to FDI inflows. The framework of Bevan & Estrin (2004), they believes, that the stage of development of institutions are crucial to attract FDI, by reducing the transactions costs of a setting up a local operation. They shows that, countries with better-developed institutions in a market economy receive more FDI inflows. With strong evidence, countries with greater privatization and more advanced private sector development receive more FDI inflows. Countries with more extensive and more effective legal systems receive more FDI. Finally, researchers are revealed partly evidence that the liberalization of domestic and international markets has a positive and significant effect on FDI inflows.

The impact of institutional quality on FDI has been investigated on limited extent in South Asian countries. Globerman and Shapiro (1999) identified the importance of institutions quality for MNCs. They developed governance quality index using six governance indicators that include rule of law, corruption, etc of Kaufman et al.(1999). A good Governance has significant effect on FDI inflows. They used principal components methodology for this index development. Quéré (2005) found that good institutions are main source of attractiveness for FDI inflows. For empirical analysis they used data set of 52 countries. They also controlled the issue between institutions and market size. They evaluated good institutional quality raise bilateral FDI inflows. Hyun (2006) analyzed the short run and long run relationship between institution quality and FDI inflows by analyzing the data of 62 developing countries over the period of 1984 to 2003. There is no short run causality between these two variables. Institutional quality affects FDI positively in long run and short run.

Wernick (2009) had estimated the relationship between institutional quality and FDI for the 64 emerging countries. It is evaluated that strong institutional quality creates a friendly environment and main source for FDI attraction. FDI inflows took place comparatively to those countries having weak governments. In the strand of literature, Wei (2000) observed the data for 143 countries over the period of 1995 to 1997. His finding shows that three main factors of institutional quality like regulating, legislation system and legal system are key determinants that attract FDI, and these key determinants must be friendliness to FDI inflows. Corruption factor is also observed to negatively affect FDI.
inflows. They argued that a good quality of institutional condition in host country attract more FDI as well as create feasible condition for emerging of new MNCs in host country. Vadlamannati (2008) analyzed the data for South Asian countries for the period of 1975 to 2006, highlighted the importance of institutional quality, GDP growth rate, per capita GDP for FDI inflows.

DEVELOPING COUNTRIES FEATURES FOR ATTRACTING FDI

Based on theoretical framework, the OLI paradigm helping us to decide upon the main reasons and objectives of the different location factors that is able to determine (positively or negatively) the choice of one country or another as the last destination for the FDI made by MNEs. The proponents of this approach acknowledge that there are three main motives for MNEs to carry out FDI (Dunning, 1993):

- To seek natural resources.
- To seek new markets, and
- To seek strategic assets.

The main background of this approach is summarized in Figure 1. As explains there are significant differences between Developing Countries and Developed Countries in four respects:

- The level of FDI.
- The type of basic location advantages.
- The reason for the FDI received, and
- The most relevant locational factors for attracting FDI.

In figure1 we are showing the countries’ economic development by classifying their evolution. The first consists of the wealthy industrialized countries, or Developed Countries, which is experienced from past two decades a convergence in their income levels, consumption patterns and technological resources and capabilities. These Developed Countries are in the final column from left to right of figure one. The second group comprises the newly industrialized countries, which are catching up and converging with the Developed Countries. Newly industrialized countries are in the third column of the figure1. The third category is made up of a large number of Developing Countries that, far from converging with the Developed Countries and newly industrialized countries are in many cases diverging from them. Developing Countries are in the least developed stages of the figure1.

THEORETICAL FRAMEWORK

Establishing relationships between DBI variables and the volume of FDI inflows (USD Million) requires a theoretical foundation behind, based on two issues: first, the factors that MNEs can decides (by the intensives MNCs have) to invest in abroad or specifically investment in host country. Secondly, there is certain factors similarly encourages the FDI inflows, particularly DBI variables, which are indicating the level of institutions operation in a country, these indexes measuring strengths of legal institutions, complexity and cost of regulatory process for operating a business in host country. The first theory explicated by John Dunning’s OLI paradigm or the eclectic paradigm, while the second one theory is illuminated by various empirical researches based are to Douglass C. North.

The eclectic paradigm or OLI paradigm (John Dunning 1988, 1993 and 2000) emerges affirmation of reasons for becoming MNCs. According to Dunning (1988) developed “Eclectic or OLI paradigm theory” that FDI decision abroad depends upon OLI determinants. The term OLI denotes to ownership, location and internationalization environments accordingly. Firstly, the term (O) indicates the ownership factors the issues for MNCs to decide FDI in abroad. The ownership factor includes protection of property rights, enjoying monopoly power and controlling the supplies of outputs in that country. Secondly, another term (L) that denotes Location factors that determining MNCs decision for FDI in developing countries. The Location factors can be categorized on the basis of market seeking factors, efficiency seeking factors for MNCs. The market seeking factors include large market size, easy and small numbers of export/import documents, least days for exporting and importing of goods and commodities with reasonable cost to the targeted markets. Large market size normally increases the productivity potential of MNCs by achieving economies of scale in host country. The efficiency seeking factors that matters for FDI include cheap and skilled labor force, soft regulations for easily operation with affordable cost, less capital, limited time, easy and small number of procedures
requirements for setting up a business “Starting a Business” in host country. The infrastructure factors include constructions and road networks, communication system as well as the electric consumption capacity in host country are majors’ determinants for FDI (DELBO, 2009).

Douglass C. North clarifies the theory of institutions, how institutions manipulating the routine of the economy and FDI flows too. Institutions have the ability to affect the total production costs, by transaction costs as much as the transformation costs. Transformation costs of inputs such as land, labor, capital, goods and services, in a production process can be affected by the quality of institutions. The quality of institutions determines the application of contracts, the enforceability of rights, regulation and duties, measurement and uncertainty in the markets. This is how North argues the effect of institutions on transformation costs. The weight of institutions in a production costs affects profits and the country’s attractiveness for FDI inflows (North 1990).

The theoretical application of the areas included in the DBI was presented by several studies coordinated by Simeon Djankov and confirmed by the FDI literature. The former address that effects the legal institutions system (Djankov et al 2002a), the regulation of entry of firms (Djankov et al 2002b), the regulation of registering properties (Djankov et al 2003), procedural time costs on trade (Djankov, Freund and Pham, 2006), creditor protection through the legal system and information sharing institutions (Djankov McLiesh & Shleifer, 2007), corporate taxes (Djankov et al 2008a), enforcement contracts (Djankov et al 2008b) and investors protection (Djankov et al 2008c). The later presents explanations of location decisions based on the will to minimize operational costs or on a transactional costs approach. The implementation of business facilitation measures in order to provide firms with a better environment for their investments gained, especially in the context of regional integration agreements. When intra-regional transaction costs are reduced and national policies have some degree of coordination in order to form a level playing field for businesses, national jurisdictions tend to rely more heavily on these measures to differentiate from each other when competing for investment (UNCTAD, 1999, p. 124). Among them, government promotion through lower taxes and local incentives (Devereux and Griffith, 1998; Gorg, 2005), an efficient legal system (Buch et al, 2005), easy-to-comply regulatory procedures (Hajkova et al 2006), lower barriers to entry (Alesina et al 2005) and lower skilled labor costs and union membership (Bellak, Leibrecht and Damijan, 2007; Ondrich and Wasylenko, 1993) have a positive effect on investment inflows.

MODEL SPECIFICATION

There are various empirical models developed in economic literatures for identification of economic determinants for FDI. There were no common principles accepted theoretically for FDI determinants. The recent literature has highlighted that market size, labor force; a good institutional quality and ownership taxes and profit as been us

\[ NFDI_{it} = f(SB_{it}, DWCP_{it}, RP_{it}, GC_{it}, PI_{it}, PT_{it}, TAB_{it}, EC_{it}, CB_{it}) \]

Where:

- \( NFDI_{it} \) = Foreign Direct Investment Net Inflows in \( t \)th country for \( t \)th year
- \( SB_{it} \) = Starting a Business in \( t \)th country for \( t \)th year
- \( DWCP_{it} \) = Dealing With Construction permits in \( t \)th country for \( t \)th year
- \( RP_{it} \) = Registering Property in \( t \)th country for \( t \)th year
- \( GC_{it} \) = Getting Credits in \( t \)th country for \( t \)th year
- \( PI_{it} \) = Protecting Investors in \( t \)th country for \( t \)th year
- \( PT_{it} \) = Paying Taxes in \( t \)th country for \( t \)th year
- \( TAB_{it} \) = Trade Across Borders in \( t \)th country for \( t \)th year
- \( EC_{it} \) = Enforcing Contracts in \( t \)th country for \( t \)th year
- \( CB_{it} \) = Closing Business in \( t \)th country for \( t \)th year

(Beven et al., 2000), used an appropriate methodology for panel data (time specific and cross section specific) analysis. In panel data analysis, a time and space dimensions are covered by surveying cross section units over time. A strongly balanced panel data has been used, thus each cross section units contained almost equal numbers of observations. Estimation methodology for panel data is useful
in reducing econometrics problems and omitted or missed measured variables (Hsiao 1989, Azam et al 2010). The econometric equation applied in this study can be specified as:

\[ y_{it} = \alpha_{i1} + \sum_{j=2}^{T} \beta_{j} x_{jit} + \epsilon_{it} \]  \[2\]

In this equation the dependent variable is FDI net inflows \( y_{it} \) for \( i^{th} \) country and \( t^{th} \) years, in this area we are estimating the impacts of DBI on FDI inflows, in addition to the use of net FDI is preferable to flows in a way that they are less volatile, and more relevant to disclose the role of DBI. And \( i = 1,2,3 \ldots N \) representing the numbers of cross section countries, where the value of \( N = 6 \) or six countries (Pakistan, Bangladesh, India, Afghanistan, Sri Lanka and Iran), where \( t = 1,2,3 \ldots T \) time period where, \( T = 10 \) years time series data from 2004 – 2013. \( \alpha_{i1} \) representing the intercept terms, which is constant over time but varied across countries. And \( \beta_{j} \) can be consider as slop of coefficients where \( j = 1,2,3 \ldots J \), and \( x_{jit} \) capturing the \( j^{th} \) explanatory or independent variables for \( i^{th} \) country at \( t^{th} \) years. Which is a set of explanatory variables are considered the DBI nine indexes or institutional qualities of six countries and economic control variables. \( \epsilon_{it} \) is error term or stochastic random term for \( i^{th} \) country and \( t^{th} \) years, its mean is independent and identically distributed (iid) with zero mean value and constant variance. A pooled OLS, fixed effect and random effect models can be specified for regression analysis that depends upon the assumptions made about \( \alpha_{i1} \). It is assumed that \( \alpha_{i1} \) remained fixed. A general equation for random effect model can be written as:

\[ y_{it} = \sum_{j=2}^{T} \beta_{j} x_{jit} + u_{i} + \epsilon_{it} \]  \[3\]

Although the fixed effect model general equation will be specified as follow:

\[ y_{it} = \sum_{j=2}^{T} \beta_{j} x_{jit} + \epsilon_{it} \]  \[4\]

A fixed effect model can be specified in our study for the regression estimations as follow:

\[ NFDI_{it} = \alpha_{i1} + \beta_{2} SB_{it} + \beta_{3} DWCP_{it} + \beta_{4} RP_{it} + \beta_{5} GC_{it} + \beta_{6} PI_{it} + \beta_{7} PT_{it} + \beta_{8} TAB_{it} + \beta_{9} EC_{it} + \beta_{10} CB_{it} + \epsilon_{it} \]  \[5\]

Where, in this model \( \alpha_{i1} \) denoting intercept (constant) and all other variables are related to World Bank DBI which is used as explanatory variables for measurement of relationships between FDI net inflows in the selected countries.

In case \( \alpha_{i1} \) are assumed to be random not fixed, it is also assumed that their mean is equal to \( \bar{\alpha}_{i} \), and variance is \( \delta_{\mu} \). In this way GLS estimators are used for obtaining random effects of error component model. A general form of equation in Random Effect Model can be specified as:

\[ y_{it} = \bar{\alpha}_{i} + \sum_{j=2}^{T} \beta_{j} x_{jit} + u_{i} + \epsilon_{it} \]  \[6\]

Here is, \( \bar{\alpha}_{i} = \alpha_{i1} + \mu_{i} = \beta_{0} \), a random effect and pooled OLS model can be specified in our study as following, but selecting the appropriate model between them will drives upon the test (BP-LM) validity:

\[ NFDI_{it} = \beta_{0} + \beta_{1} SB_{it} + \beta_{2} DWCP_{it} + \beta_{3} RP_{it} + \beta_{4} GC_{it} + \beta_{5} PI_{it} + \beta_{6} PT_{it} + \beta_{7} TAB_{it} + \beta_{8} EC_{it} + \beta_{9} CB_{it} + u_{i} + \epsilon_{it} \]  \[7\]

**DATA:**

The data set consists of panel observations from six Asian countries, including Afghanistan, Bangladesh, India, Iran, Sri Lanka and Pakistan for the period 2004 -2013. The selected economies have the abilities to influence each other in the region, in the terms of trade, political situation and economic crisis, growth and development, respectively. In this paper, the key variables are FDI and DBI. FDI data set is acquired from UNESCAP, UNCTAD, World Investment Report and global economy watch measured in term of FDI inflows (Million $ USD), and DBI variables obtained from World Bank Doing Business surveys. Actually, for collecting the data on the doing business index indicators, the World Bank collaborates with the academic professionals to craft a business case survey.
This technique predicts a business scenario and asks questions about how that firm would function in the host country. Per annum, the appraisal is delivered by almost 5,000-8000 local experts per economy. These experts include lawyers, consultants, accountants, supply chain professionals, government officials, and other businesspeople routinely administering or consulting foreign firms. In addition to, the business case survey, the World Bank contacts the professionals an average of four times through conference calls and visits to refine the data and clear up misconceptions about the survey questions. To ensure the accuracy of the survey results, responses are compared to other data known about the economy ("Data Notes," 2009).

The World Bank's Doing Business (DB) database dealings with the level of government administrations of a country regards to doing business. The database covered a set of 41 indicators, divided into the following 11 parts of analysis: starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, closing a business, getting electricity, and employing workers. For this analysis we used 33 indicators, which are aggregated into firstly named nine indexes corresponding to the respective areas and explained in (table 1)⁴.

In this study we will measure the DBI with the distance of each economy to the “frontier”. The frontier represents the highest performance observed or each of the indicators across all economies measured in Doing Business since the inclusion of the indicator. An economy’s distance to frontier is reflected on a scale from 0 to 100, where 0 represents the lowest performance and 100 represent the frontier. For example, a score of starting a business 49 in DBI 2004, for Afghanistan means this index in the mentioned economy was 51 percentage points away from the frontier constructed from the best performances across all economies/index and across time. A score of 90.52 for starting a business in DBI for same economy in 2013 indicating the index is improved. In this way the distance to frontier measure complements the annual ease of doing business ranking, which compares economies with one another at a point in time. The data (statistical figures) on the designated variables are fully accessible online from described foundations, can be verified easily.

**EMPIRICAL RESULT**

This empirical study examines the relationship between Doing Business Indexes and Net Inflows of Foreign Direct Investment through pooled OLS, fixed effect and random effect models estimations. The appropriate estimation method to explore this relationship will depend on specific characteristics of countries, on the error term and on the independent variables, as well as on the relation between them (Rodríguez and Pallas, 2008). The estimations are carried out by using the STATA 10.1, and Eviews 8.0.

Before running the regression, we have estimated the order of integration for each variable otherwise econometric specification leads us to counterfeit kinds of results (Asterieou and Hall, 2007) by the help of Eviews 8.0. In this study we have applied Im, Pesaran and Shin W-stat (2003, hereafter, IPS) unit root test approach to check for the stationarity of variables, this test is based on the recognized Augmented Dickey-Fuller procedure, IPS (1997) disclosed that t-test has better performance when N and T are small. Whiles, the IPS (2003) proposed a test for the existence of unit roots in panels, which combines evidence (information) from time series and cross sectional lengths. Since the IPS test has been found to have superior test power by researchers in economics to analyze long-run relationships in panel data. We also employed this procedure in this study. IPS uses separate unit root tests for the N cross-section units, based on ADF statistics averaged across groups. They proposed a cross-sectional demeaned version of both test to be used in the case where the errors in different regressions contain a common time-specific component. This test is performed on some conditions at level, 1st difference and for one variable only in 2nd difference unit root testing. The IPS test results are reported in Table 2. The results show that all variables included are stationary. This implies that the null hypothesis of unit root is rejected for all variables at level and 1st difference, while just one variable is stationary or rejecting null hypothesis in 2nd difference plus trend and intercept, but it’s not the macroeconomic variable, its estimating legally protection of investors both the local and foreigners. Hence we can estimate all parameters of panel data by panel least square, fixed effect and random effect specification.

Before we move to the regression analysis, it is worthy to examine the partial correlations that exists between FDI Inflow and the independent variables. In other words, the correlation of each variable defining the nature and strengths of the relations between each selected index with the level of

---

⁴ For Details information visit doing business websites, the contents explained from doing business methodology
FDI net inflow. Consequently, correlation analysis not only supports to explain relations between variables but also frequently suggests directions for experimental research such as regression analysis. From Table 3, it is become evident that the closing business or resolving insolvency index and paying taxes is not in the favorable of FDI net inflows, these are insignificant to attract FDI. Similarly, the correlation analysis also exposes that starting a business, dealing with construction permits, registering property, getting credit, protecting investors, trade across borders and enforcing contracts indexes have been directly and significantly associated with FDI inflow in these Asian economies.

In Table 4, there is strong correlations between FDI net inflow and independent variables, it means changes in any index can affects the FDI inflow somewhat, there is a strong negative correlations between starting a business, dealing with construction permits indexes. Whilst, FDI net inflow has strong positive correlation with getting credit and protecting investors’ indexes. Conversely, quite small and negative correlation with closing business or resolving insolvency index, but surprisingly FDI inflow is highly negatively correlated with paying taxes index, as well as getting credit is superior positive correlated with the protecting investors.

In Table 5, the results are estimated by panel least square, fixed and random effects specification. The results estimated from different panel estimation specification are not almost the same excepting pooled OLS and random effects, but the Breusch Pegan LM test implied and accepts the null hypothesis, that random effect is more appropriate than pooled OLS, as well as Hausman test is used for more appropriate model specification between fixed effect and random effect. In our study, the value of Chi-square statistics of Haussmann test is insignificant, suggesting that the results of random effect than fixed effect model is more appropriate and efficient, but fixed effect model is inconsistent and inefficient. However we have reported all the results, which is estimated from all three specifications.

The estimation provides a more specific analysis, showing which institutional area (doing business index) has a stronger and weaker effect on FDI inflow. Thus the factors that most influence the level of FDI inflow are, in particular, the number of procedures, the costs and the time required to start a business and to registry a property; and also the procedural requirements for exporting and importing. For instance, Starting a Business index is practices as proxy for setting up a business abroad exerts inverse relation and significant effects on FDI inflows which is consistent to the literature. This implies that on average one unite changes in the starting a business index will declines USD25 Million to the region, its increments in the sub-indicators of index which are initially, coverings time cost and capital for operating a business in host country, if index improved encourages the MNEs to enter into this region.

The regression results revealed dealing with construction permits index has reciprocal and significant effects on FDI inflows the result supporting theory, the index is taking into account the cost and time on services for delivering legal permits for building a business warehouse, on average one unit changes in index (sub-indicators increments), USD 244 Million of FDI inflow will decline.

The registering property index has positive and significant effect on FDI inflow, according to the doing business/registering property rights are essential for investment provision, productivity and growth. The basic tools are computerized database (Cadastres) or surveys together, which is practices around the world to map, prove and secure property and user rights with land registries. This index is part of the land and buildings information system which accounting for an economy, the best economies having an up-to-date properties information system that clearly explaining the matters. Regression results supporting the evidences from economies around the world suggests that property owners with registered titles are more likely to invest. They also have a better chance of getting credit when using their property as collateral. "i.e. Argentina witnessed greater investment in homes after formal titles were granted to residents. Compared with the residents who did not receive title, title holders increased the overall value of their homes by 37%. (Galiani et al, 2009) In Nicaragua, having a formal title not only made owners more likely to invest but increased land values by 30%. (Deininger et al, 2002) Following a land titling project in Thailand, property increased in value by 75–197% after being registered". It means these selected economies have the capacity to attract about USD 257 Million FDI inflow per annum, subjective to registering property index.

The getting credit indicates that as coverage (exposure) of getting credit in the host country increases that ultimately increase the demand for investment and for operating the businesses. Thus, possibly the economy can attract more FDI from outsiders in the world, the index is statistically significant and have positive relation with FDI inflow.

[For detail visit: http://www.doingbusiness.org/data/exploretopics/registering-property/why-%20matters#1]
[For More detail visit: World Bank Doing Business Methodology 2013]
The Protecting investors’ index of Doing Business constituted from several indexes, it’s considering strengths of minority shareholder protections against directors’ misuse of corporate assets for personal gain. The indicators of index differentiated into three extents of investor protections: these are pellucidity of related-party dealings (extent of disclosure index), liability for self-dealing (extent of director liability index) and shareholders’ ability to sue officers and directors for misconduct (ease of shareholder suits index), which increments in all these aspects will discourage FDI inflow, and local businesses too. Thus we can concludes, the results supported theory, perhaps the protecting investors index has inverse relation and significant effect on FDI inflow, regression result revealed an average one unit weakening/loosening in the index will declines about USD215 Million to the region. It means, all the directors increases the misuse of corporate assets for personal gains, liabilities for self-dealing and mis-conducting shareholders’ ability. Perhaps, if strengthen index’s sub indicators, it has the capacity to encourage this amount FDI inflow to the region.

The Trade Across Border index is significant and explaining the FDI inflow with positive relation, in a globalized world, making trade between countries easier is increasingly important for business. The ability of firms and economies to compete in global markets has been put to the test in the past few years of economic turmoil. In 2009, world trade recorded its largest decline in more than 70 years. No region was left untouched and one study shows that during the recent slump in global demand, making trade easier helped to mitigate the decline in an economy’s exports by promoting stronger links between suppliers and buyers. In Malaysia, PEMUDAH’s Focus Group on Trading Across Borders, chaired by the Ministry of International Trade and Industry, is undertaking initiatives to improve Malaysia’s trade environment. In the 2012 report, Malaysia was ranked 29th among 183 countries in the area of Trading Across Borders. Cost to export and import in Malaysia at USD450 and USD435 per container respectively, are the lowest globally (PEMUDAH e-Bulletin Issue 4/2012). Continuous efforts to reduce time, costs and procedures to trade are being undertaken through establishing benchmarks and best practices in relation to ASEAN and OECD countries.

The improvements in the Doing Business Rankings are likely to positively influence FDI inflows. Hence rather than focusing on enforcing contracts, it is possible improvements in the average country’s Doing Business Ranking present a signaling effect to external investors that its business environment is becoming more favorable to foreign investment, the enforcing contracts is statistically significant and explaining the FDI inflow with inverse relation. While, paying taxes and closing businesses indexes have strong effects, but cannot explain FDI inflow, they are statistically insignificant.

The results represents, that improvements in communication facility and provides a feasible facility for MNCs and strengthening the regulations for investors. It ultimately shows a positive effect on FDI inflow, these institutional qualities exerts significant effect on FDI inflow. The result implies that as political and legal institutions quality improvements in rules of laws, deterioration of corruption and government stability etc, and providing a fair and friendly environment regarding investment protection point of view will attract FDI inflow.

CONCLUSION

This research paper presents evidence of a significant relationships between the Doing Business Indexes and FDI inflows. These findings also supporting the more general claim that governments that regulate well in one area, such as domestic business, tend to also regulate well in other areas, such as foreign investment. Although this does not imply causation, the findings do support the claim that Doing Business Indexes reflects more about the overall investment climate than what matters only to small and medium-size domestic firms. This suggests that there is a direct link between FDI and actions undertaken by the government. As explained, national governments are already used to altering some of the DBI sub-indicators because they help local businesses and can encourage FDI. Some common sub-factors such as corporate taxation rate, required local business ownership, and profit remittance rules are already used by governments to influence FDI. There must be some distinctions made, though, between the types of FDI. Multinational firms that want to simply construct a distribution hub will be more interested in the cost to build the facility and the ease of trading across borders. Companies that want to create a branch will need to know about the number of procedures and length of time it takes to create and close a business. This allows governments to specifically target certain types of FDI. If a government wants to be more business friendly, (domestically and internationally) a common refrain found was a restructuring of paperwork and more explicit easy regulations, so approval time could be shorter. One aspect in particular that affects most categories in the Doing Business Index is time. Seven of the Doing Business Index sub-headings factor in time
whether it is hours, days, or years. Six categories are affected by the number of procedures. Especially for smaller companies that do not have the resources to spend making mistakes or waiting around for approval, clearer processes are important.

More definitive conclusions about the relationship between Doing Business indicators and FDI will require more refined research. One initial step could be to disaggregate FDI by sector: for example, to compare the effect of business regulations on manufacturing FDI with their effect on resource extraction FDI. If such research supports the association between regulatory quality as measured by Doing Business and the size of FDI inflows, government officials and business analysts will have even stronger justification for claims that better Doing Business rankings should attract more FDI.

ACKNOWLEDGMENT

The consciousness of my entire master is the effects of strong motivation and strengths given from various people. I would like to express here my everlasting gratitude.

Firstly to my supervisors, everyone, Associate Professor Dr. Faridah Shahadan and Associate Professor Dr. Tamat Sarmidi, to whom I am eternally gratifying for having accepted to guide me in my dissertation thesis. The enthusiasm and the excellent advices given were precious and highly valuable for accomplishment of this academic paper. As well as to all my professors at University Kebangsaan Malaysia (UKM) for their wealthy teachings (lectures), and sharing of their gargantuan knowledge and intelligences. Their comments and suggestions were immensely constructive, it results a huge intelligence and hardworking attitude. Although, I would like to express gratitude to all my mates (colleagues) at University Kebangsaan Malaysia (UKM), the fantastic opportunity that I had to know them. It was a very rich academic experience, since the issues raised in classes to the economic talks at presentation time, I admire you a lot. I cannot be tuned to them only, to all my friends, who always believed in me and gave me much strength and motivation to complete this paper. Furthermore, I would like to express a special thanks to my wife for all her supports and patience that she gave me throughout the progress of my studies. Beyond this, to my dear parents, I owe an eternal gratitude for having made me the person I am today, for the environment of peace, love and comfort in which I grew-up, and more than that. Thank you for the strength you ever gave me, especially in realization of my studies. I dedicate this paper with an endless love for you.

REFERENCES


Djankov, Simeon & Rafael La Porta & Florencio Lopez-de-Silanes & Andrei Shleifer (2002b), The Regulation of Entry, Quarterly Journal of Economics, February, pp. 1-37


Rosetta Morris and Abdul Aziz, Ease of doing business and FDI inflow to Sub-Saharan Africa and Asian countries: Cross Cultural Management Vol. 18 No. 4, 2011 pp. 400-411


 Websites:
http://www.doingbusiness.org
http://unctadstat.unctad.org/
http://data.worldbank.org/
http://dx.doi.org/
http://www.adb.org/data/statistics

All authors address is related to the:
School of Economics
Faculty of Economics and Management
University Kebangsaan Malaysia
43600 Bangi, Selangor
MALAYSIA
If the positions of the FDI host and home countries in the investment development path (figure 1) are known, then it will be easy to predict what kinds of location factor, which are usually linked to different reasons, will play the most prevalent role in attracting such investments.

**Source:** The Authors, (Jose I. Galan, et al Nov 2007: 978-981), and (Narula & Dunning 2000: 146-147)

**FIGURE 1:** Shows The Main Distinctive Features Of The Investment Path And FDI Inflows:

**TABLE 1:** Indicators For Measurements Of Doing Business Index

<table>
<thead>
<tr>
<th>Doing Business Indexes</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Measures complexity and cost of regulatory process</strong></td>
<td></td>
</tr>
<tr>
<td>Procedures (Number)</td>
<td></td>
</tr>
<tr>
<td>Time (days)</td>
<td></td>
</tr>
<tr>
<td>Cost (% income per capita)</td>
<td></td>
</tr>
<tr>
<td>Min. Capital (% income per capita)</td>
<td></td>
</tr>
<tr>
<td>Procedures (Numbers)</td>
<td></td>
</tr>
<tr>
<td>Time (days)</td>
<td></td>
</tr>
<tr>
<td>Cost (% of income per capita)</td>
<td></td>
</tr>
</tbody>
</table>
2. Measures the strengths of legal institutions

<table>
<thead>
<tr>
<th>Getting Credits</th>
<th>Legal rights index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Credit information index</td>
</tr>
<tr>
<td>Public registry coverage (% adults)</td>
<td></td>
</tr>
<tr>
<td>Private bureau coverage (% adults)</td>
<td></td>
</tr>
<tr>
<td>Discloser index</td>
<td></td>
</tr>
<tr>
<td>Protecting Investors</td>
<td>Directors liabilities index</td>
</tr>
<tr>
<td>Shareholders suits index</td>
<td></td>
</tr>
<tr>
<td>Investor protection index</td>
<td></td>
</tr>
<tr>
<td>Enforcing Contracts</td>
<td>Procedures (Numbers)</td>
</tr>
<tr>
<td>Time (days)</td>
<td></td>
</tr>
<tr>
<td>Cost (% of income per capita)</td>
<td></td>
</tr>
<tr>
<td>Closing Business</td>
<td>Cost (% of income per capita)</td>
</tr>
<tr>
<td>Time (days)</td>
<td></td>
</tr>
<tr>
<td>Recovery rate (cents on the dollar)</td>
<td></td>
</tr>
</tbody>
</table>

### Table 2: The IM, Pesaran Shan Stat Unit Root Test Result:

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Statistics</th>
<th>Prob.**</th>
<th>Level</th>
<th>1st Difference</th>
<th>2nd Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFDI</td>
<td>4.12713</td>
<td>0.0000**</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB</td>
<td>6.00829</td>
<td>0.0000**</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DWCP</td>
<td>8.00548</td>
<td>0.0000***</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RP</td>
<td>2.87893</td>
<td>0.0020**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GC</td>
<td>2.47638</td>
<td>0.0066**</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td>-2.63860</td>
<td>0.0042***</td>
<td></td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>PT</td>
<td>1.94139</td>
<td>0.0261**</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAB</td>
<td>6.32055</td>
<td>0.0000**</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC</td>
<td>3.088255</td>
<td>0.0010**</td>
<td></td>
<td></td>
<td>√</td>
</tr>
<tr>
<td>CBorRI</td>
<td>9.32404</td>
<td>0.0000***</td>
<td>√</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: *, **, *** indicating the value of significant at 1, 5 and 10 percent respectively.

### Table 3: Partial Correlation of FDI Inflows with Other Independent Variables:
<table>
<thead>
<tr>
<th>Variables Name</th>
<th>Correlation</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starting a Business (SB)</td>
<td>0.3326</td>
<td>0.0000</td>
</tr>
<tr>
<td>Dealing with Construction Permits (DWCP)</td>
<td>0.3308</td>
<td>0.0000</td>
</tr>
<tr>
<td>Registering Property (RP)</td>
<td>0.2328</td>
<td>0.0001</td>
</tr>
<tr>
<td>Getting Credit (GC)</td>
<td>0.3337</td>
<td>0.0000</td>
</tr>
<tr>
<td>Protecting Investors (PI)</td>
<td>0.0791</td>
<td>0.0295</td>
</tr>
<tr>
<td>Paying Taxes (PT)</td>
<td>0.0138</td>
<td>0.3801</td>
</tr>
<tr>
<td>Trade Across Border (TAB)</td>
<td>0.1732</td>
<td>0.0009</td>
</tr>
<tr>
<td>Enforcing Contracts (EC)</td>
<td>0.0686</td>
<td>0.0432</td>
</tr>
<tr>
<td>CBorRI</td>
<td>0.0313</td>
<td>0.1761</td>
</tr>
</tbody>
</table>

**Table 4: Correlation Matrix between Variables:**

<table>
<thead>
<tr>
<th></th>
<th>NFDI</th>
<th>SB</th>
<th>DWCP</th>
<th>RP</th>
<th>GC</th>
<th>PI</th>
<th>PT</th>
<th>TAB</th>
<th>EC</th>
<th>CBorRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFDI</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB</td>
<td>-0.6686</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DWCP</td>
<td>-0.5984</td>
<td>0.4030</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RP</td>
<td>0.4907</td>
<td>-0.2226</td>
<td>0.0111</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GC</td>
<td>0.5877</td>
<td>-0.3025</td>
<td>0.1220</td>
<td>0.6304</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td>0.2900</td>
<td>-0.3670</td>
<td>0.4459</td>
<td>0.4364</td>
<td>0.8039</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PT</td>
<td>-0.4462</td>
<td>0.4056</td>
<td>-0.0651</td>
<td>-0.8344</td>
<td>-0.5592</td>
<td>-0.5292</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAB</td>
<td>0.1207</td>
<td>-0.0612</td>
<td>0.6030</td>
<td>0.6163</td>
<td>0.7011</td>
<td>0.8041</td>
<td>-0.6326</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC</td>
<td>-0.2587</td>
<td>0.4122</td>
<td>0.1679</td>
<td>0.3349</td>
<td>-0.0983</td>
<td>-0.2814</td>
<td>-0.0649</td>
<td>0.1929</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>CBorRI</td>
<td>-0.1682</td>
<td>0.1828</td>
<td>0.5250</td>
<td>0.5443</td>
<td>0.2579</td>
<td>0.4165</td>
<td>-0.6387</td>
<td>0.5673</td>
<td>0.0771</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

**Table 5: The Different Models Estimation Results:**

<table>
<thead>
<tr>
<th>Foreign Direct Investment Net Inflow in USD Million (NFDI)</th>
<th>Pooled OLS</th>
<th>Random Effect</th>
<th>Fixed Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients</td>
<td>T (P-value)</td>
<td>Coefficients</td>
</tr>
<tr>
<td>Starting a Business (SB)</td>
<td>-255.7302</td>
<td>-2.70 (0.010)</td>
<td>-255.7302</td>
</tr>
<tr>
<td>Dealing with Construction Permits (DWCP)</td>
<td>-244.1656</td>
<td>-3.59 (0.001)</td>
<td>-244.1656</td>
</tr>
<tr>
<td>Registering Property (RP)</td>
<td>256.8236</td>
<td>2.54 (0.015)</td>
<td>256.8236</td>
</tr>
<tr>
<td>Getting Credit (GC)</td>
<td>268.8634</td>
<td>3.68 (0.001)</td>
<td>268.8634</td>
</tr>
<tr>
<td></td>
<td>Protecting Investors (PI)</td>
<td>Paying Taxes (PT)</td>
<td>Trade Across Border (TAB)</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------</td>
<td>-------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td></td>
<td>-214.6353 (0.031)</td>
<td>61.2924 (0.528)</td>
<td>191.703 (0.041)</td>
</tr>
<tr>
<td></td>
<td>-214.6353 (0.026)</td>
<td>61.2924 (0.525)</td>
<td>191.703 (0.036)</td>
</tr>
<tr>
<td></td>
<td>-187.405 (0.437)</td>
<td>14.97232 (0.859)</td>
<td>324.641 (0.005)</td>
</tr>
<tr>
<td></td>
<td>-2.23 (0.031)</td>
<td>0.64 (0.528)</td>
<td>2.10 (0.041)</td>
</tr>
<tr>
<td></td>
<td>-2.23 (0.026)</td>
<td>0.64 (0.525)</td>
<td>2.10 (0.036)</td>
</tr>
</tbody>
</table>

| No of Observations      | 55                        | 55                | 55                        |
| R2                      | 0.8922                    | -                 | -                         |
| R2 Within               | -                         | 0.0521            | 0.3469                    |
| R2 Between              | -                         | 0.9971            | 0.0652                    |
| R2 Overall              | -                         | 0.8922            | 0.0408                    |
| Wald χ²                 | -                         | 372.25            | F(9, 40) 2.36              |
| Prob>χ²                 | -                         | 0.0000            | Prob>F 0.3003             |

Breusch Pegan LM Test χ² =0.13 (0.7157)
Hausman Test χ² (9) =0.0059 (0.794)

Note: The numbers in parenthesis representing the p-values.