Determinants of Bilateral FDI Inflows in Pakistan from Major Investing Countries: A Dynamic Panel Approach

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Abstract

As attracting inflow of Foreign Direct Investment (FDI) is a red-hot issue nowadays and it has become an ultimate goal of any developing country. This paper targets to inspect the effects of income, institutional quality (democracy) and trade openness on FDI inflows of Pakistan by applying dynamic PMG estimators. 24 FDI contributing countries are considered for a period of 1985-2014 for investigation. This paper finds the evidence for a positive contribution of income of both Pakistan and investing countries and trade openness in FDI inflows. Institutional quality can only attract FDI in short run.

Key Words: FDI Inflows, Income, Democracy, Trade Openness

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1. Introduction

Developing countries are always facing lack of capital investment, trained skillful human capital, technological sufficient production processes and efficient markets. These absent factors of developing countries encourage them to compete among other developing countries to invite FDI for fostering their economic growth and to strength their national markets. For this purpose, economies encourage the inflow of FDI in order to excel their economic growth and development by providing conducive investing environment to the developed countries of the world.

FDI plays an extraordinary role and a direction in going global. FDI not only affects economy as an external resource inflow but also modernize industry and integrate the economy into international production. FDI is considered a way to attract investment from developed countries. The inflow of investment in any form from foreign countries facilitate the home country to avail the opportunities to fill the capital gap, improvement of human capital and managerial skills, technological up gradation, production processes, employment prospects and market structure. Financial investment can be attracted by essential and conducive economic environment.

Many studies, theories and researches have been conducted and tested for determining the driving forces of FDI and its flow for the last many decades. Agrawal and Khan (2011) stated that FDI means to invest in long term at some distant place e.g. country wise; where the FDI transaction may be occurred into different forms of Joint venture, transfer of technology, enterprise and management etc. FDI is an important factor in globalization. In 1970's international trade grew rapidly as compare to FDI but dramatically situation change in 1980's when investors motivated by technology transfer and establishment of marketing networks for perfect production and selling globally. Carbaugh (2000) states that flow of FDI usually occurs from the low-profit to high-profit sections, creating the future profit eagerness (profit seeking) which is one of the simple incentives to undertake investment activity. Nevertheless, it is apparent that high anticipated future returns play a substantial role in the movement of FDI inflows, until now there are numerous further aspects which should be measured carefully.

Every country engages its energies to be in marathon of economic growth and development but not all actually succeed in this milestone. A country's progress can be measured through a positive and healthy economic and political structure which can only be achieved by productive investment as it is considered essential for the long run existence and nourishment of an economy. FDI is one of the financial agents needed by any such developing country to progress as it can play distinctive and unique roles in the progress and development of an economy. It is not easy to deny the importance and significance role of FDI and to reject its influence on a developing country like Pakistan. There are some catalyst agents needed by any developing country to increase the FDI inflow in long run to bridge up the capital gap, improvement of production process, to equip with high quality and large scale economies, to incorporate modern and advance level technology and to improve the efficiency of human resources. The developing countries usually face short of financial resources for its onward investment in the country to improve the living standard of the society. The countries have become aware enough of this need and try to be benefited from developed countries by providing investment friendly policies. As Pakistan is having insufficient inflow of FDI, due to lacking of various factors which are needed to be addressed in order to understand the causes of inadequate inflow of FDI and to understand the importance of determinants that attract it. There has been studies on the driving forces of FDI in Pakistan but none of these do the disaggregated analysis. To deal with the aggregate macroeconomic data can be source for misleading results due to aggregation biasness. Therefore, this paper is motivated to test the FDI inflows model by taking the data of 24 investing countries in a dynamic panel approach.

2. Literature Review

The literature has discussed varied determinants to attract the inflow of FDI which are the actual potentials, a country should characterized to invite the foreign investment. At first, the studies are reviewed in the setting of bilateral FDI inflows with gravity model. For example, Frenkel et al. (2004) applies gravity model and OLS estimators for panel data are used by the authors regarding FDI flows from advanced economies to developing economies. They also employ dummy variables by using two-component model for capturing the home and investing countries effects along with the time effects. They conclude in their findings that distance and market size are influencing FDI flows; other economic features including economic growth and risk in recipient countries are also found critical for attractive transnational investment projects. Buch et al. (2003) explore FDI transmission by using gravity model. They applied two-step panel vector auto regression estimation. They used gravity model with specification of only two variables, size of two-sided trade and GDP per capita. The authors do not confirm the relationship of trade and FDI. Though using cross-section regressions over 5 years for the stock of German FDI abroad, it is concluded that distance and GDP are the key determinants of FDI. Ledyaeva and Linden (2008) explore the inward FDI Gravity model to explore the foundations of irregular spreading of FDI. That paper analyze the factors having impact on six foreign firms of source countries in seventy six Russian regions with cross-sectional data set during a period 1998-2002. That study conclude a positive impact of both countries' GDP on FDI. Contrary to this, the larger distance between the investing region and the home country led to low probability of FDI inflows. Bevan and Estrin (2004) analyze the gravity approach to Central & Eastern European from western countries. They also used panel data set of mutual flows and establish that the key aspects were market size, unit labor costs and distance.

In the relationship of FDI and democracy, de Mello (1997) states that remarkably, the country specific factors can be underlined from the prominent and significant institutional structures of the beneficiary country. These institutional structures may include deep-rooted democracy and social equity, political stability, legislation of corporations, the security of experienced property rights and degree of intervention into economy by the government. He also states that FDI provides control over the foreign entities as it is a form of international inter-firm corporation. For the growth of an economy, FDI is important. So every country tries to attract more and more FDI to take greater advantages. Easterly (2001) states that it is a self-proclaimed fact that political stability is a significant issue in most of the developing countries because to implement and to achieve desirable outcomes from any policy, time is needed to build the trust of investors which is possible in long run through politically sound and stable situation. Policy weakness is also one of the issues. Many developing countries come across owing to many causes. Globerman and Shapiro (2003) inspect the importance of governance as a factor for US FDI and US promotes to invest in the countries which are having transparent governance and deep rooted social values. Transparence governance and effective legal system promotes the social values which lead to receive US FDI infrastructure and US FDI. Goyal (2007) observes that the countries with socially responsible corporate structure have seen the rise in the inflow of FDI. Countries have become keen to attract FDI inflow by revealing the type and social responsibilities of their particular firms. Inefficient governance of any country has significant impact on FDI. The country with poor governance on property rights may not in a position to attract foreign investment. Doces (2010) in his empirical analysis of democracy on FDI of developing countries assesses that if there is an increase in the level of democracy, it offers the right combination of micro and macro environment to have high inflow of FDI. Ledyaeva et al. (2013) studies the variables corruption and democracy for inflow of FDI from foreign countries to Russian regions during 1996-2007. The authors in their panel study analysis assess that the foreign countries with less corruption and highly democratic level prefer to invest in regions of like characteristics with the attributes of less corruption and high democracy.

In the relationship of FDI and trade, Hsiao and Hsiao (2006) determine the relationship of volume of trade and FDI; they argued that exports leads to onward FDI inflow, which leading to economic growth in Eastern and Western countries. Liu et al. (2001) observe association between trade of China and FDI considering a panel data of China and 19 investing economies. They indicates that increase in China's imports expanded inward FDI from investing countries which in result increases exports from China. The growth of exports causes FDI inflow.

The following review of literature has also underlined the importance of FDI in a manner that everyone will accord on the need to explore the reasons for the loss of FDI and measures to improve the inflow of FDI to Pakistan. Azam and Lukman (2008) investigate the influence of gross domestic product on FDI in Indonesia, Pakistan and India for period 1971-2005. They conclude that economic growth plays a vital role to attract the FDI and bi-directional relations also exist between them. They establish the findings that domestic investment, infrastructure, market size, return on investment and trade openness had positive and significant correlation with FDI inflows. Akhtar (2000) discusses that political instability is deteriorating the confidence of the investor and ultimately is disturbing the investment environment of Pakistan. The restless situation and extreme political instability in Pakistan has led to the hesitant behavior to local and international investors. Investors feel insecure about the return on investments due to unpredictable political situations which has made the investment environment very risky in Pakistan. Hashim et al. (2009) probe the influencing factors of FDI inflows in telecom sector. They observe that in Pervez Musharraf regime FDI in Pakistan as compared to the previous years started increasing year by year and has reached to its maximum peak in year 2008. However, it started to decline later after 2008. The decline has been observed due to political instability. The stable political conditions prevailing in a country has a significant relation with inflow of FDI.

The literature has established a view that inflow of FDI may be considered as lifeblood of developing economies in the modern era. Practical aspects of FDI along with future prospects have been the dream of many classical financials who are the advocators of robust financial system. The literature is verifies that the application of gravity model on FDI has become popular in recent years; earlier its application was common to Trade only. The gravity equation is used in the empirical finding of international trade and economics; bilateral trade, regress by GDP of two countries is directly proportional to their respective sizes while inversely proportional to their geographic distances. The substitution of FDI for Trade is of excessive attraction and latest approach. On the other hand, improper level of democracy is responsible for low of level of FDI inflows. Therefore, this present paper is motivated to collect the democracy, trade and GDP of FDI investing and recipient country in a gravity model to see role of mentioned factors on FDI inflows.

3. Data, Model and Estimation Strategy

3.1 Data Sources

The data of FDI of Pakistan from major investing countries are taken from State Bank of Pakistan. GDP of Pakistan and investing countries, and imports and exports of Pakistan have been taken from WDI. All data is taken in million constant US dollars. Democracy index is taken from Freedom House.

3.2 Selection of the Sample

The sample of the data comprises of 24 major FDI contributing countries. The sample consists of Australia, Bahrain, Canada, China, France, Germany, Hong Kong, Italy, Japan, Korea (South), Kuwait, Luxembourg, Malaysia, Mauritius, Netherlands, Norway, Oman, Saudi Arabia, Singapore, Sweden, Switzerland, United Arab Emirates (U.A.E), United Kingdom (U.K) and United States of America (U.S.A). Annual time series of all selected countries are taken for a period 1985-2014. The sample is selected on the basis of maximum availability of data.

3.3 Model and Estimation Strategy

The concept of gravity model has earlier been used in International Trade but its implication on FDI is a recent concept. This study is applying the FDI Gravity Model particularly to the case of Pakistan and to dig out the causes for the loss of FDI in the recent time period. The history of gravitation model initiated in pure sciences by Newton in his second law of motion which was later applied in social sciences by Tinbergen. Tinbergen (1962) applied Newtonian approach to explain bilateral trade flows which is positively dependent on the GNPs of the trading partners or countries and negatively dependent on the air / shipping distance separating them. Here, this study is ignoring the distance as gravity model has also been used in the empirical estimation without distance. The purpose of dropping this variable is that it is constant over a single cross section and therefore, it disturbs the nature of dynamic model. Further, political condition is very important in attracting the FDI in any country suggested by de Mello (1997), Easterly (2001) and Doces (2010) and political condition can be accessed through the level of democracy. Therefore, democracy has been include in the model. Furthermore, trade openness is also very important variable in attracting FDI as greater the trade openness is showing greater level of trade freedom. Foreign investor are more concerned with the openness of trade in a country due to their larger level of production, for a need of import of production inputs and exports of their product as suggested by Hsiao and Hsiao (2006) and Liu et al. (2001). Therefore, this paper is also considered the importance of trade openness for FDI inflows. To capture the impact of incomes, trade openness and democracy on FDI inflows in Pakistan, the study proposes the following model:

$FDI_{it} = f\ (GDPH_{it}, GDPF_{it}, OPH_{it}, DEMH_{it})$ (1)

Where,

FDI_{it} = FDI inflows in Pakistan

$GDPH_{it}$ = GDP per capita of Pakistan

$GDPF_{it}$ = GDP per capita of investing countries

OPH_{it} = Trade openness index of Pakistan

$DEMH_{it}$ = Democracy index of Pakistan, proxy for institutional quality in Pakistan

The gravity model is non-linear in nature. Therefore, the study uses GDPs and trade openness in log form. Democracy is not taken in log due to an ordinal variable and it is also taking negative score as well. FDI inflows can also be negative and log is not possible.

After log, the model comprises of following equation:

$$FDI_{it} = a_0 + a_1\ LNGDPH_{it} + a_2\ LNGDPF_{it} + a_3\ LNOPH_{it} + a_4\ DEMH_{it} + u_{it} \tag{2}$$

Where, LN is a natural log operator, i are 24 investing countries in Pakistan and t are time period of 1985-2014 in analysis. The equation (2) will be tested by Pooled Mean Group (PMG) estimators. It is superior technique in testing the cointegration and short run relationships in the model as it is efficient in presence of mix order of integration and there is no need for pre-testing of unit root problem in variables. Further, it is dynamic and it also cares the heterogeneity in the cross sections. The test equation is as follows:

$$\begin{aligned} FDI_{it} &= \alpha_i + \varphi_1 FDI_{i,t-1} + \varphi_2 LNGDPH_{i,t-1} + \varphi_3 LNGDPF_{i,t-1} + \varphi_4 LNOPH_{i,t-1} \\ &+ \varphi_5 DEMH_{i,t-1} + \sum_{j=1}^{p-1} \phi_{1j} \Delta FDI_{i,t-j} + \sum_{j=0}^{q-1} \phi_{2j} \Delta LNGDPH_{i,t-j} + \sum_{j=0}^{q-1} \phi_{3j} \Delta LNGDPF_{i,t-j} \\ &+ \sum_{j=0}^{q-1} \phi_{4j} \Delta LNOPH_{i,t-j} + \sum_{j=0}^{q-1} \phi_{5j} \Delta DEMH_{i,t-j} + \xi_{it} \end{aligned} \tag{3}$$

Equation (3) is ARDL type equation for PMG estimators. It is used in finding the long run normalized coefficients and short run estimators can also be found from difference variable coefficients. The second to sixth terms on the right hand side can be called collectively as error correction term and can be used for the evidence of cointegration in the model.

3.4 Description of Variables

GDP per capita: ($GDPH_{it}$, $GDPF_{it}$)

It is showing the average income level of a country. A higher income is Pakistan is a symbol for higher demand for product and investors, local or foreigners, can have better returns of their investments. Further, income of investing is representing the supply condition of FDI from investing countries. As higher income is expected to have higher savings and investment capacities. The positive relationship of FDI inflows to both types of GDPH and GDPF is anticipated. Both led to economic stability which acts as a positive role to attract FDI.

Trade openness: (OPH_{it})
It has been measured in terms of proportion of trade and calculated by dividing the sum of export and imports of Pakistan by her GDP. More trade is symbol of openness and foreign investors are interested in investment in higher open economies. Trade openness and FDI inflows are supposed to be positively related.

Democracy: ($DEMH_{it}$)
It ensures the protection of the set of rights and freedoms of the citizens and protection of public interests. In democracy, political organizations and elected officials serves the public and protects the individual rights. In democratic government, all the eligible citizens having equal rights of casting votes in fair elections to elect a representative of government in executive and legislative offices. It has been used as a proxy of institutional quality. Polity IV has been implied as its proxy. This index's range is -10 to +10 and higher value shows higher level of democracy in a country. Democracy plays an important role for any country as it states about the political stability, law and order discipline, harmony among the institutes, appropriate governance on procedures of import and export with few restrictions and fair equality in social terms. A higher democracy or polity IV score means higher institutional quality as well. Therefore, a positive relationship between FDI and democracy is anticipated.

4. Data Analysis and Discussions

Table 1 shows the results based on PMG estimators and long run relation is existing in the model as cointegrating coefficient is negative and significant. In long run, income of Pakistan (LNGDPH) is positively and significantly impacting the FDI inflows. It is an evidence that Pakistani market size or demand for product are sufficient to attract the FDI inflows from investing countries. The income or GDP of investing countries (LNGDPF) has positive and significant, but at very low level i.e. 11% level of significance, impact of FDI inflows from investing countries. It is showing the supply condition of investing countries is also good enough. As increasing income may result in more savings that might be channelized towards the Pakistan in terms of FDI inflows. But, democracy has insignificant impact on FDI inflow in Pakistan. That is showing the insufficient institutional quality to attract FDI inflows in long run. However, trade openness has positive and significance influence on FDI inflows in long run.

Table 1: PMG Estimators: Dependent Variable is FDI

Variables	**Coefficients**	**S.E.**	**t-value**	**Prob.**
Long Run Estimates				
LNGDPF	1.3916	0.8501	1.6369	0.1023
LNGDPH	2.5132	1.1268	2.2303	0.0262
DEMH	-0.4962	0.6948	-0.7141	0.4755
LNVOTH	1.7511	0.4961	3.5292	0.0005
Short Run Estimates				
Error Correction Term	-0.6275	0.0514	-12.2013	0.0000
ΔLNGDPF	2.7386	14.4831	0.1890	0.8501
ΔLNGDPH	3.5416	2.0200	1.7532	0.0802

ΔDEMH	0.8559	0.4358	1.9638	0.0501
ΔLNOPH	-0.5645	0.1998	-2.8257	0.0049
Intercept	-170.42	16.72394	-10.1902	0.0000

After a discussion on long run results, short run results are showing that income of Pakistan, as proxy for local demand for products and hence demand for FDI inflows, has also positive and significance impact on FDI inflows like long run results. But, GDP of investing countries has insignificant impact on FDI inflows. Further, democracy has positive influence at least in short run because its impact is absent in the long run. Therefore, institutional quality in Pakistan is at least remained helpful in inviting FDI in short run. Furthermore, trade openness is negatively influenced the FDI. It implies that more trade is becoming the substitute of FDI inflows. But this phenomenon is not hold in long run as positive and significant impact of trade openness has been observed. This also implies that foreign investors could be able to invest and produce the import-substitute by investing FDI in Pakistan in long run. Therefore, FDI is performing as complement of trade in long run and substitute in the short run.

5. Conclusions

In the literature many of the studies have been accomplished to check the consequence of various determinants on inflow of FDI. This study has applied the FDI inflows' Gravity Model especially for the case of Pakistan taking into consideration Gross Domestic Product of Pakistan and investing country, Trade openness and democracy as independent variables along FDI as dependent variable. As the developing countries are striving for inflow of FDI irrespective of cultural, religion, infrastructural and social differences in order to fill capital gap, up-gradation of production processes, technology advancement and train human resources. The purpose of the research is to ascertain major drivers of FDI inflows in Pakistan. This study has engaged the testing of FDI inflows model on annual data of 24 countries for a period 1985-2014 by applying the dynamic PMG estimators. This research finds an evidence for long run relationship in the FDI inflows model. Income of Pakistan has found the positive contributor of FDI inflows both in short and long run. Income of investing country could only support the FDI inflows only in long run with very low level of significance. Democracy is showing positive influence only in short run but its long run impact is found insignificant. Trade openness has positive and significant influence on FDI inflows in long run but its impact is found negative in the short run.

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