Determinants of Foreign Direct Investment in India, Indonesia and Pakistan: A Quantitative Approach

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Abstract

This study examines the various economic factors effects on foreign direct investment (FDI) inflows into Pakistan, India and Indonesia during the study period ranging from 1971 to 2005. Log linear regression model for each country has been used and the method of least squares has been applied to estimate the various economic determinants effects on FDI inflows. Empirical results revealed that market size, external debt, domestic investment, trade openness, and physical infrastructure are the important economic determinants of FDI. Further, this study found that the empirical results of the economic determinants of India matched with the empirical results of Pakistan excluding two determinates (viz, trade openness and government consumption) while the results of Indonesia do not match with the results of the economic determinants of FDI for Pakistan and India. To enhance more FDI into Pakistan, India and Indonesia, the management authorities need to ensure economic and political stability, provision of infrastructure, peace and security, law & order situation, encourage domestic investment, curtail external debt, and equal importance may be given to appropriate monetary and fiscal policy.

Keywords: Determinants of FDI, Pakistan, India, Indonesia

Introduction

The word investments may be used in a variety of ways. It can mean a stock or bond purchased to fulfill certain financial goals; it can also mean a physical asset such as a tool acquired to produce and sell a product. Idle cash is not an investment, since its value is likely to be eroded by inflation and it fails to provide any type of return. The same cash placed in a bank savings account would be considered an investment, since the account provides a positive return. Investment may be real investment or

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financial investment. Real investment means increase in physical stock of capital such as machinery, buildings, and plants etc, while financial investment means that investment which does not increase the productive capacity of the economy such as, purchase of some running plants, or share of some already existing firms and purchase of bonds etc. Sometimes investment creates confusion with capital. Infact, investment is the flow of spending that adds to the physical stock of the capital (it means that investment is a flow concept, because it is concerned with the accumulated volume of capital). Meanwhile investment is a flow variable and to create new capital and capital is stock variable.

Foreign private investment can be categorized into two forms i.e., Foreign Direct Investment (FDI) and portfolio investment. This study focuses only on the FDI. FDI may be outward FDI and inward FDI. Outward FDI refers to direct in abroad, while inward FDI refers to direct investment in host countries or direct investment comes from abroad. Investment is the act of purchasing those goods, which can generate further goods. There are two types of FDI i.e., outward FDI and inward FDI. The former is subject to tax incentives as well as disincentives of various forms. Risk coverage provided to the domestic industries and subsidies granted to the local firms stand in the way of outward FDI, which are also known as "direct investments abroad."

Different economic factors encourage inward FDI. These include interest loans, tax breaks, grants, subsidies, and the removal of restrictions and limitations. Factors detrimental to the growth of FDI include necessities of differential performance and limitations related with ownership patterns. Other categorizations of FDI exist as well. Vertical Foreign Direct Investment takes place when a multinational corporation owns some shares of a foreign enterprise, which supplies input for it or uses the output produced by the multinational corporations (MNCs). Horizontal foreign direct investments happen when a multinational company carries out a similar business operation in different countries. Foreign direct investment is defined as a long-term investment by a foreign direct investor in an enterprise resident in an economy other than that in which the foreign direct investor is based. It is generally acknowledged that foreign direct investment produces economic benefits to the recipient countries by providing capital, foreign exchange, technology, competition and by enhancing access to foreign markets (Crespo and Fontura, 2007). By bridging the gap between domestic savings and investment and bringing the latest technology and management know-how from developed countries, foreign direct investment (FDI) can play important role in achieving rapid economic growth in the developing countries (Khondoker and Mottaleb, 2007).

FDI is one of the most important forms of international capital flows. Particularly for Less Developed Countries (LDCs) like Pakistan, India and Indonesia, FDI has been the most important source of foreign investment and an important source of technological spillovers.

A transitional economy often looks outward in order to find the opportunity for rapid growth. Inward FDI helps them acquire the technology of the developed world and apply this more advanced technology to their industries. Transition economies may expect other benefits too. Since foreign firms increase competition, their presence may encourage greater efficiency in domestic firms. Even foreign investment may help increase workers incomes, if it creates higher-paying jobs in the host country. Because foreign investment offers many potential benefits to host countries, policy makers are naturally interested in knowing what factors attract FDI. There is no presumption among many academics and policy makers that Foreign Direct Investment (FDI) is somehow special. One common view is that FDI helps accelerate the process of economic development in host countries. Many policy makers and academics struggle that foreign direct investment (FDI) can have important positive effects on a host country's development effort (Alfrao 2003). It is not exaggerated to say that FDI plays essential role in the encouragement of national economic development, bringing innovative technology, up to date management and marketing techniques. When domestic resources are short to finance the development requirements, FDI is one of the sources of external finance for lower income countries, like Pakistan, India and Indonesia.

Objective of the Study
The broad objectives of this study are to analyze those factors which discourage and encourage FDI inflows to Pakistan, India and Indonesia during the study period. Moreover, to know about the trends and importance of FDI inflows into these selected countries.

Literature Review
Systematic review of literature is highly important for research activity because it gives relatively inclusive information concerning the problem and provides an improved understanding to make objectives of the research study.

Though several empirical studies have been conducted concerning the factors determining FDI. Most of the studies utilize multiple numbers of theories or hypotheses in order to investigate the empirical linkage between FDI and variety of economic, social and political variables. But the key literature includes work by Dunning

(1993), who introduced an Ownership-Location-Internalisation (OLI) paradigm to explain FDI by Multinational Enterprises. Dunning's location advantage theory provides a framework to identify important variables that influence FDI using three main categories: (a) economic, (b) social or cultural factors, and (c) the political environment. Overall, Dunning concludes that foreign countries that attract investment by multinational firms have a large and growing market, a high gross domestic product, low production costs, and political stability.

Various researchers studied the demand side factors such as market size, incentives and operating conditions, infrastructure and political stability, while they ignored the supply side determinants, such as economies of scale, product life cycle and internalization. Also the demand side determinants have analyzed by using aggregate variables but they did not give any proper coverage to supply side determinants due to non-availability of data. While many of studies have been conducted regarding to test the FDI determinants and found the size of the market almost universally as an important determinant of FDI in developing countries. Asiedu (2002) applying Least Square techniques for all estimations in the study and found that openness, return on investment and GDP as proxy variable for market size, are significant variables for FDI fostering and infrastructure and political risk found insignificant. Quazi and Mahmud (2004) investigated that which factors, either economic or non-economic, drive the flow of FDI into South Asia and found that economic freedom, openness, prosperity, human capital, and lagged FDI significantly increase FDI inflow into South Asia, while political instability depresses it. Naeem, Ijaz, and Azam (2005) used time series data from 1970-71 to 1999-2000 for Pakistan and found the main economic factors are market size, domestic investment, trade openness, indirect taxes, inflation, and external debt. Jana (2008) reported as one would expect that GDP and access to European common market are important determinants of the foreign direct investment level in the transition economies.

Trends of FDI Inflows into Pakistan, India and Indonesia
Table 1 shows that the trend in FDI inflows into Pakistan, India and Indonesia during 1971-2008. As the data demonstrated that in 1971 the FDI inflows was US$ 299.07 million, US$ 4.766 million and US$ 1.00 million into Indonesia, India and Pakistan respectively. Gradually with the globalization, the FDI inflows into these countries increased. The total world FDI inflows reached to US$ 1833324 million in 2007. Data in Table 1 depicts that in 2006 the FDI inflows reached to US$ 5579.693

million, US$ 17453.1 million, and US$ 4273 million into Indonesia, India and Pakistan.

FDI reached to US $3481.6 million during the first 10 months (July-April) of the current fiscal year as against US$ 4180.8 million in the same period last year and it is revealing a decline of 16.7 percent. Approximately 57 percent of FDI has come from three countries, namely, the UAE, USA, and UK. USA investors with 33.4 percent investment are on the top during the first ten months (Embassy of Pakistan, 2008)

UNCTAD (2007) reported that in the year 2007 Indonesia, China, Egypt and Columbia received FDI in total US$ 96.4 billion, which was nearly 31 percent of total FDI flowed to less developed countries. Whereas some less developed countries, like Bolivia and Yemen faced the problem of negative FDI inflow (i.e., FDI outflow).
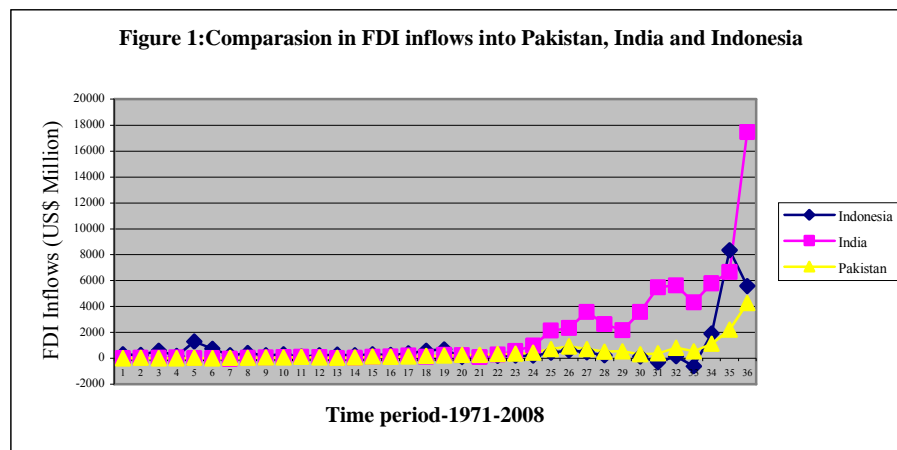
According to Government of Indonesia (2008) statement FDI inflows in Indonesia rose 73 percent to US$10.3 billion last year; this is because of political stability and an improving outlook for Southeast Asia's biggest economy. The state investment agency (BKPM) said foreign investors invested mainly in the telecommunications, pharmaceuticals, pulp and food-related sectors, considered attractive because of the potential for consumer spending by Indonesia's 226 million people to increase. Government of India (2009) reported that the total cumulative FDI inflows into India from 1991-2008 was US$ 99,005 million. The service sector (financial and non-financial) enhanced 22% FDI during 2005-2008, computer software and hardware 12% FDI and telecommunication sector enhanced 8%.

Table 1: FDI inflows into Pakistan, India, and Indonesia; 1971-2008 (US$ million)

Years	Indonesia	India	Pakistan	Years	Indonesia	India	Pakistan
1971	299.07	4.766	1	1990	109.3	236.69	245.3
1972	253.52	17.79	17	1991	148.2	73.53764	258.4
1973	581	37.91	-4	1992	177.7	276.5124	336.5
1974	182.12	56.97	4	1993	200.4	550.37	348.6
1975	1292.06	-10.3262	25	1994	210.9	973.2715	421
1976	747.59	-7.70643	8.2	1995	436	2143.628	722.6
1977	235	-36.06	15.2	1996	619.4	2326.057	922
1978	417.71	18.09	32.3	1997	467.7	3577.33	716.3
1979	226	48.57	58.3	1998	240.8	2634.652	506
1980	300.09	79.16	63.6	1999	1865.621	2168.591	532
1981	133	91.92	108.1	2000	134	3584.217	308

1982	225	72.08	63.8	2001	-297.79	5471.947	383
1983	292	5.64	29.5	2002	145.0855	5626.04	823
1984	222	19.24	55.5	2003	-596.92	4322.748	534
1985	310	106.09	131.4	2004	1896.083	5771.297	1118
1986	258	117.73	105.7	2005	8336.257	6676.524	2201
1987	385	212.32	129.4	2006	5579.693	19962	4273
1988	576	91.25	186.5	2007	6928	22950	5333
1989	682	252.1	210.6	2008	….	….	….

Source; World Development Indicator, the World Bank Group, 2008

Source: On the basis of Table 1 data

Data Description and Methodology

This study is based on secondary time series data ranging from 1970 to 2005. Data used in this study have been obtained from Economic Survey of Pakistan (various issues), Economic Survey of India (various issues), World Investment Report (various issues), and World Development Indicator (various issues) respectively. Linear regression models would be used to analyze the various factors effects on FDI inflows into Pakistan, India and Indonesia during the study period. The ordinary least square (OLS) method would be used as an analytical technique. Due to non-linearity the data has been transformed into log fomr. The E.View statistical software has been used for computation.

Model Specification and Regression Analysis

Foreign investors undertake investment abroad with the prime objective to earn maximum profit. While as it is known that return particularly on FDI, taking forms of profit, expansion of business, market development

and innovations, are linked to different factors of the host country and varying degree of risk also attached with them as discussed earlier. Obviously there is no single theory to explain FDI but many researchers suggested a number of economic, social and political variables determining the inflows of FDI based on various theories of FDI (Ioannatos, 2003; and Aseidu, 2002, 2005)

In the present study utilizing the following linear regression model for the determinants of FDI, which has also been used by Ioannatos (2003), and Aseidu (2005) respectively.

The symbolic form of the log linear regression model is given as follow:-

$$\ln(FDI) = \alpha_0 + \alpha_1 \ln(MKTZ) + \alpha_2 \ln(DEBT) + \alpha_3 \ln(INF) + \alpha_4 \ln(DI) + \alpha_5 \ln(RI) + \alpha_6 \ln(EEGTC) + \alpha_7 \ln(Tax) + \alpha_8 \ln(TO) + \alpha_9 \ln(GC) + \varepsilon_1$$

(1)

The equation (1) states that FDI is a positive function of the market size measured by gross domestic product of the host country, domestic investment, return on investment, trade openness, and infrastructure facilities. Similarly the effect of external debt burden, inflation rate, government consumption, and taxes will be negative on FDI inflows.

Where

FDI   = Foreign Direct Investment

MKTZ = Market size proxy used Gross Domestic Product

DI   = Domestic Investment

DEBT = External Debt

TO   = Trade Openness (X+ M/GDP)

EEGTC = Infrastructure proxy used Expenditure on Electricity, Gas, Transport and Communication

GC   = Government Consumption

Tax   = Indirect Taxes

INF   = Inflation

RI   = Return on investment measured by 1/GDP per capita

ε   = Error term

The explanatory variables and error term (ε) will follow the least square assumptions.

Empirical Results

The empirical results obtained are acceptable and significant on the basis of R-squared (R^2) and Adjusted R-squared values. Almost multicollinearity problem has been removed by dropping some collinear variables during regression analysis and the Durbin Watson Statistics is 2 or very near to 2, which shows no autocorrelation problem as well.

The estimated regression equation of economic determinants of FDI for Pakistan is;

FDI = - 4.3814 + 5.005 MKTZ - 2.922 DEBT + 1.701 INF - 0.306 GC + 0.913 EEGTC
- 2.628 Tax + 4.829 DI + 3.482 TO + 5.937 RI   (2)

In case of Pakistan, results of the Table 2 shows that one of an important variable that is market size (MKTZ) has been found positively significant at one percent level of significance. Chakrabarti (2001, 2003), Ioannatos (2003), Banga (2003), and Eli et al., (2006) also found a positive significant relationship between FDI and market size. The effect of external debt has been found highly significant with expected negative sign at one percent level of significance. Banga (2003), and Eli (2006) also found negative relationship between external debt and FDI.

This study found that the impact of infrastructure is positively significant at one percent level of significance. Asiedu (2002), and Ioannatos (2003), also found positive significant results. Another key variable is trade openness found highly significant with positive sign at one percent level of significance. Aseidu (2002), and Ioannatos (2003) also found positive relationship between trade openness and FDI inflows. As expected domestic investment found highly significant with positive sign at one percent level of significance. Razin (2003) and Yasmin et al., (2003) also found positive significant results. The effect of indirect tax on FDI has been found significant with negative sign at five percent level of significance. Chakrabarti (2003) also found negative significant relationship between taxes and FDI inflows. Similarly return on investment has been found statistically significant with expected positive sign at five percent level of significance. Tsai (1994) also found positive relationship between return on investment and FDI inflows. However, inflation rate have been found insignificant with unexpected positive signs while government consumption has been found insignificant with expected negative sign. But it does not mean that these variables have no effect on FDI but they are equally important in the determination of FDI inflow.

The estimated regression equation of economic determinants of FDI for India is;

FDI = 42.495+14.0231MKTZ -1.7146 DEBT + 0.5411INF + 0.3599GC + 15.768 EEGTC+ 1.682 DI -14.083 TO   (3)

In case of India ,the results of Table 2 shows that market size has been found statistical positively significant at 5% level of significance. The external debt has been found highly significant with expected negative sign at 5% level of significance. This study found that the impact of

infrastructure is positively significant at 1% level of significance. Trade openness has been found significant with unexpected negative sign at 5% level of significance. Domestic investment has been found highly significant with positive sign at 5% level of significance. However, inflation rate and government consumption have been found insignificant with unexpected signs but it does not mean that these variables have no effect on FDI but they are equally important in the determination of FDI inflows.

The estimated regression equation of economic determinants of FDI for Indonesia is;

$$FDI = 11.710 + 0.836 \ MKTZ - 0.1156DEBT + 0.242 \ INF - 2.038DI - 2.069 \ TO \quad (4)$$

The empirical results obtained for Indonesia do not match with the empirical results of Pakistan and India and almost all the results are insignificant statistically, even the over all model is insignificant on the basis of Adjusted R-squared value i.e., 0.03 only. The empirical results are insignificant because of error in the data, as for Indonesia the whole data on all incorporated variables have been taken from the World Development Indicator (2008), while for Pakistan the data have been obtained from Economic Survey of Pakistan and World Development Indicator and similarly for India the data have been taken from Indian Economic Survey (various issues).

Table 2: Comparison of the Estimates of Economic Determinants of FDI
   of   Pakistan, India and Indonesia

Dependent Variable: FDI					
Method: Least Squares					
Pakistan		**India**		**Indonesia**	
Independent Variables	**Coefficients (t-statistics)**	**Independent Variables**	**Coefficients (t-statistics)**	**Independent Variables**	**Coefficients (t-statistics)**
Constant (C)	-4.38 (-0.67)	Constant (C)	42.49 (1.65)	Constant (C)	11.71 (2.56)
Market size (MKTZ)	5.00 (3.12)*	Market size (MKTZ)	14.03 (2.79)**	Market size (MKTZ)	0.83 (1.34)
External debt (DEBT)	-2.92 (-5.03)*	External debt (DEBT)	-1.71 (-2.47)**	External debt (DEBT)	-0.115 (-0.23)
Inflation rate (INF)	1.70 (0.79)	Inflation rate (INF)	0.54 (2.13)**	Inflation rate (INF)	0.24 (0.87)
Government consumption (GC)	-0.30 (-0.34)	Government consumption (GC)	0.36 (1.15)		
Infrastructure (EEGTC)	0.91 (2.94)*	Infrastructure (EEGTC)	15.77 (3.29)*		
Tax	-2.62 (-2.59)**				
Domestic investment (DI)	4.82 (3.84)*	Domestic investment (DI)	1.68 (2.24)**	Domestic investment (DI)	-2.03 (-2.23)
Trade openness (TO)	3.48 (3.76)*	Trade openness (TO)	-14.08 (-2.76)*	Trade openness (TO)	-2.06 (-1.52)
Return on investment (RI)	5.93 (2.87)**				
R-squared (R^2)	0.97	R-squared (R^2)	0.92	R-squared (R^2)	0.17
Adjusted R-squared	0.96	Adjusted R-squared	0.91	Adjusted R-squared	0.03
S.E. of regression	0.50	S.E. of regression	0.67	S.E. of regression	0.87
Akaike info criterion	1.71	Akaike info criterion	2.26	Akaike info criterion	2.72
Schwarz criterion	2.21	Schwarz criterion	2.61	Schwarz criterion	2.98
F-statistic	102.57	F-statistic	50.76	F-statistic	1.26
Durbin-Watson statistic	2.06	Durbin-Watson statistic	1.97	Durbin-Watson statistic	1.17
N	35	N	35	N	35

   *Note: (i). The asterisks *, **, shows that estimates are significant at*
   1%, and 5%, level of significance respectively.
      (ii). The figures in parenthesis are t-statistics

Conclusions and Suggestions

Results of this study are meaningful and helpful in the policy making for enhancing FDI inflows in order to promote economic development. It has been acknowledged that FDI bring benefits to the recipient countries by providing capital, foreign exchange, new technology and in such a way bridging the gap between domestic savings and investment.

The empirical result revealed that the most important economic variable found were market size that shows a country's development levels permit the exploitation of economies of scale which is likely to increase the attractiveness of FDI vis-à-vis alternative forms of internalization. The external debt burden is like a disincentive for FDI as found with negative relationship between this variable and FDI inflow. The effects of infrastructure facilities are positively significant in explaining inflow of FDI. In case of Pakistan the effect of indirect taxes has been found significant with negative sign. Obviously multinational corporations aim to earn more profit, therefore, it can be assumed that they are sensitive to tax factors, because tax has a direct effect on their profit. Such as the domestic investment shows a positive significant result and the positive significant relationship means that domestic investors are investing in Pakistan. The effect of trade openness in case of Pakistan has been significant and it shows liberalization, which are conducive in affecting FDI inflow. However some variables in case of Pakistan inflation and government consumption have been found insignificant, but it does not mean that these variables have no role to affect FDI inflow. The empirical results of India matched with the results of Pakistan excluding two determinants (viz, trade openness and government consumption) while the results of Indonesia do not match with the economic determinants of FDI for Pakistan and India.

To enhance more FDI into Pakistan, India and Indonesia, the management authorities of each respective country needs to ensure stable economic and political environment, provision of physical quality infrastructure, maintaining inflation rate, encourage domestic investment, curtail external debt, financial incentives, reduce duties, peace and security, law & order situation and consistency in the government policy because these all are the key factors for potential investors in making investment choices.

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