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## RESEARCH ARTICLE

# Foreign direct investment and liberalization policies in Pakistan: An empirical analysis

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**Abstract:** To enhance the inflow of foreign direct investment (FDI) and ultimately to increase the economic growth, the countries have implemented a variety of financial and trade liberalization policies in the last three decades. Pakistan also initiated such type of policies. This study makes an analysis of the impact of liberalization (financial and trade) in Pakistan, on the inflow of FDI using the time series data of 1971–2009. The DF-GLS test is used to determine the level of integration, and autoregressive distributed lag model to examine the long-run relationship. The results indicate that liberalization indicators, like financial liberalization index and trade openness along with real interest rate, negatively affect the inflow of FDI in Pakistan. Tax revenue of product also negatively affects the FDI. On the other hand, the gross fixed capital formation, infrastructure, and inflation positively influence the FDI in Pakistan. The market size (proxied by real gross domestic product) has shown insignificant effect on FDI.

**Keywords:** F21—international investment; long-term capital movements, O16—financial markets; saving and capital investment

**JEL classifications:** F21, O16, C33, P27

## ABOUT THE AUTHOR



Rana Ejaz Ali Khan is associate professor of Economics and chairman, Department of Economic, The Islamia University of Bahawalpur, Pakistan. His research interest is Development Economics and Social Economics. HEC (Higher Education Commission of Pakistan) recognized him as approved supervisor for MPhil and PhD candidates having HEC scholarships and five PhD students are working under his supervision. He is Chief Editor, *Journal of Agriculture and Rural Development*; member Advisory Board, *Pakistan Social and Economic Review*, *Pakistan Journal of Commerce and Social Sciences*, *Asian Economic and Social Review*. Rana Ejaz Ali Khan has 70 publications, including a book titled *Child Labor in Pakistan*, and chapters in books. He has a book on *Malnutrition in Children*, currently in press. In the recent past an interest in financial economics has been developed by him and the current paper along with two others are outcome of this diversion. In between times he likes walking, reading literature and listening music.

## PUBLIC INTEREST STATEMENT

The link between the financial liberalization and trade liberalization has a complex mechanism. The economies are going through the process of both types of liberalizations through their policies to gain the economic benefits. On the other hand the developing economies are struggling to attract foreign direct investment focusing on the liberalization policies. The liberalization policies have effect on foreign direct investment in developing economies is a puzzle. The study empirically evidenced that in the case of Pakistan both policies (financial liberalization and trade liberalization policies simultaneously) are restricting the inflow of foreign direct investment. The government should furnish the credibility of liberalization policies probably through removal of corruption, monopolies in financing and political instability, etc. On the other hand infrastructure has shown positive impact on inflow of foreign direct investment. The policy makers should stress on the development of infrastructure in the country.

## 1. Introduction

In general, the literature on the relationship between foreign direct investment (FDI) and liberalization policies falls into two categories: In the first, studies provide evidence that well-functioning financial sector or financial liberalization spurs DFI (Asiedu, 2002; Caballero & Krishnamurthy, 2001, 2003; Campos & Kinoshita, 2010; Dutta & Roy, 2011). In the second, studies find that trade liberalization has positive effect on FDI (Blyde & Sinyavskaya, 2004; Goldar & Banga, 2007).

On the other hand, there may exist a causal relationship between FDI and financial liberalization. An increase in FDI inflows increases the funds available in the economy and causes financial intermediation to boom through financial markets and banking system. Furthermore, the companies involved in FDI are likely to list their shares in the local stock market, which enhances the process of financial development. Inversely to this process, a well-functioning financial market can attract foreign investors, as they perceive such a market as a sign of vitality. A relatively well-developed financial market increases the liability of listed companies and may reduce the cost of capital, thus rendering the country's attractiveness to foreign investment (Desai, Foley, & Hines, 2006; Henry, 2000).

The relationship between trade liberalization and FDI is complex. Firstly, it is argued that determinants of FDI and trade are similar; therefore, what determines the trade also determines FDI (Ekholm & Södersten, 2002). Secondly, estimates of econometric models in which FDI exports and imports are determined simultaneously argued that they are endogenous variables (Hejazi & Safarian, 2003). Lastly, the studies that looked at the impact of regional trade agreements on FDI flows show that regional trading agreements can influence FDI inflows as the risks associated with investment decline with greater regional integration.

Empirical studies have evidenced that FDI and trade liberalization are interlinked. This link has become more complex in WTO regime where several developing economies have adopted the import liberalization policies. The growing volumes of the trades of economies in their regime made the policy-makers focus flicked based on the assumption that whether FDI causes trade or trade boosts FDI inflows. Particular concern was that what kind of trade boosts FDI. The empirical literature on the impact of trade on FDI flows has mixed results. Some of the studies have indicated that FDI preserved markets that were previously established by exports (Grosse & Trevino, 1996), while others have concluded that FDI follows exports (Eaton & Tamura, 1994). Even there are evidences of two-way relationship between international trade and FDI (Aizenman & Noy, 2005).

Another aspect of the trade liberalization is its link with financial liberalization. Aizenman and Noy (2004) examined the relationship between financial and trade liberalization and concluded that both are closely interlinked. Portes and Rey (2003) concluded that international trade in goods and assets has similar regressions against financial liberalization. In this complex mechanism and mixed evidences of interaction between financial liberalization, trade openness (TOI), and FDI, we are apprehensive to see how the financial liberalization and TOI have simultaneously affected the FDI in Pakistan. The core objective of this study is to estimate the determinants of FDI in Pakistan mainly focusing on financial liberalization and TOI.

## 2. Literature review

We are concerned with empirical relationship between FDI and liberalization policies in Pakistan. According to our knowledge, there exists no study that analyzed the effects of financial liberalization and trade liberalization on FDI, simultaneously. A strand of literature consists of studies relating FDI and financial liberalization, and FDI and trade liberalization. In this section, we cover the studies associated with three major variables under consideration.

For the relationship between financial liberalization and FDI, Hagen and Zhang (2007) explained that capital account liberalization leads to outflow of financial capital from one country to the other when the level of financial development is different in two countries. The direction of the flow of

financial capital depends on the degree of financial development in the two countries as well as on the specific capital control policy. The study through a two-country model explained the Lucas Paradox (Lucas, 1990), i.e. countries with least developed financial system have the outflow of both financial capital and FDI; countries with most developed financial system have two-way capital flows, (inflow of financial capital and outflow of FDI); and countries with intermediate level of financial development have the outflow of financial capital and inflow of FDI. It is consistent with the practice that FDI makes flow not only toward poorest countries but also to middle-income countries. The study proposed that developing countries with less developed financial system should impose controls on financial capital flows and attract FDI inflows.

Al Nasser and Soydemir (2010) probed the relationship between FDI and financial development in Latin American countries. They found that a better functioning financial market is critical for attracting the FDI inflow in these countries. The Granger causality tests between FDI and financial development showed a unidirectional relationship from banking sector development to FDI and not the reverse. The relationship between FDI and stock market development was found bi-directional. The results explained that FDI could initially enhance stock market development because of the investment opportunities that FDI-related spillovers effects usually generate. The stock market development could attract more FDI in turn. Soumare and Tchana (2011) analyzed the causal relationship between FDI and financial market development using panel data from emerging markets. They documented the bi-directional causality between FDI and stock market indicators. For banking sector development indicators, the relationship was found ambiguous and inconclusive.

For the relationship between trade and FDI, Aizenman and Noy (2005) investigated the intertempered linkage between disaggregated measures of international trade and FDI in developing countries. They used several methods for investigating two-way feedback between various categories of trade and FDI. After controlling the macroeconomic and institutional effects, they found strongest feedback between FDI and manufacturing trade. A similar relationship was found between TOI and net FDI inflows. Antràs and Caballero (2009) have also focused on trade and capital inflows. They argued that in a world with heterogeneous financial development, trade and capital mobility are complements in less-developed economies. In a dynamic framework, the complementarity carries over to financial capital flows. Such type of interaction implies that deepening trade integration in developing economies raises net capital inflows.

Goldar and Banga (2007) have analyzed the impact of trade liberalization on FDI in Indian industries. They found that the regions having higher involvement in international trade have attracted larger amount of FDI. However, much of the intra-industry trade being horizontal in nature (trade in final products which are differentiated by attributes) has not shown a favorable effect on FDI. On the other hand, the trade associated with cross-border vertical integration (trade in final product that is differentiated by quality) has a favorable effect on FDI. The findings have important implications for trade and FDI policies of developing countries. There has been a sustained rise in the number of bilateral and regional trade agreements, especially between developing countries. Trade in such type of agreements or among developing countries may benefit these economies, but it may have some adverse implications for the inflow of FDI.

Khan (2011) has investigated the impact of liberalization policies on FDI inflow in Pakistan. The study mainly focused on the impact of Pakistan's international political relations on FDI over the period 1972–2009. The estimate illustrates that US policies produce no significant influence on long-run capital inflow to Pakistan. However, in the short run, US diplomatic policies produced negative influence on inward flow of FDI.<sup>1</sup> The results explained that domestic investment, financial development, infrastructure, and natural resource endowments exert significant positive impact on FDI in the long as well as short run. TOI negatively influenced FDI inflows in the long run but produced no significant impact on FDI in the short run. Political risk-related factors (i.e. political rights, civil liberties, and political repression) produce no significant impact on FDI inflows to Pakistan in the long run.

However, only civil liberties positively influence FDI in the short run. The study proposed policies for strengthening resource-based activities like encouraging domestic investment, continuity of liberalization policies, and improvements of local infrastructure to promote FDI inflows to Pakistan.

### 3. Conceptual framework and estimation methodology

There is a strong consensus in the literature on a number of points regarding why foreign investors invest in specific locations. They are mainly attracted by strong economic fundamentals in the host economies. The most important of them are market size, level of real income, expansion of business activities, skill levels in the host economy, availability of infrastructure, and other resources that facilitate efficient specialization of production. Such type of elements may be categorized into market-seeking, resource-seeking, and efficiency-seeking motives. Trade policies, political stability, and macroeconomic strength are the other determinants of FDI (Blomstrom & Kokko, 2003; Dunning, 1993; Globerman & Shapiro, 1999). The studies explained that FDI inflows depend on key macroeconomic factors, like domestic investment (Haile & Assefa, 2006); infrastructure such as roads, ports, telecommunication, power, railways (Vadlamannati, 2009); natural resource endowments like fuel and minerals (Campos & Kinoshita, 2010; Khan, 2011); and TOI (Aseidu, 2002). Similarly, inflation rate, external debts, and government expenditures have been explored as determinants of FDI. Dunning (1993) suggested that ownership advantages, location advantages, and benefits from internationalization are the main determinants of FDI. On the basis of this conceptual background and empirical evidences, we have selected explanatory variables along with two principal variables of financial liberalization and trades openness to probe the determinants of FDI in Pakistan.<sup>2</sup> The explanatory variables are as follows:

*Market size:* Market size is measured by real gross domestic product (GDP). It is hypothesized that market size has a positive impact on FDI inflow.

*Fixed capital formation:* It is proxy of physical investment in an economy and it represents not only the real growth rate of the economy but also the domestic investment (see also Khan, 2011). The fixed capital formation may have a positive impact on FDI.

*Real deposited rate:* It is measured by the average deposit rate adjusted against inflation–consumer price index (CPI). It may be taken as a proxy for intensity of banks' lending. A high interest rate can hamper bank's lending activities creating an imbalance between credit and deposit activities. It ultimately affects the cost of credit and then FDI.

*Infrastructure:* The electricity production is taken as a proxy for infrastructure, although a variety of other proxies, like phones per thousand population (Soumare & Tchana, 2011) and the length of roads per thousand population, existed in literature. The level of infrastructure development is speculated to influence the flow of FDI positively.

*Tax:* The net tax revenue product has been adjusted against inflation–CPI. It is postulated that it affects the FDI negatively.

*Inflations:* It is measured by CPI, although GDP deflator (Soumare & Tchana, 2011) and other indices have been used in the literature. Inflation is a good proxy for macroeconomic stability. It is hypothesized that economic stability enhances the FDI.

Our major explanatory variables are financial liberalization measured by financial development index and TOI. We have developed financial development index using the principal component method. Financial liberalization index (FLI) indicates the level of liberalization at a specific time period. For the period 1971–2009, 11 major components of financial liberalization have been included in the index; they are as follows: (1) islamization, (2) interest rate deregulation, (3) credit constraints, (4) stock market reforms, (5) prudential regulations, (6) privatization of financial institutions, (7) removal of entry barriers, (8) non-performing loans, (9) external account liberalization, (10) debt management reforms, and (11) open market operations. Although there are different measures of financial development in literature, for instance Aizenman and Noy (2005) measured the financial openness as sum of total capital inflows and outflows as percentage of GDP. It is postulated that financial liberalization has positive effect on FDI in Pakistan.

Theoretical and empirical evidences have shown a positive link between FDI and financial development (Alfaro, Chanda, Kalemli-Ozcan, & Sayek, 2004; Hermes & Lensink, 2003). Hermes and Lensink investigated the association between financial development, FDI, and economic growth, and found a positive link between financial development and FDI. They justified their findings on the grounds that a well-developed financial system efficiently mobilizes savings, which, in turn, expand the amount of resources available to finance investment. Furthermore, financial development also speeds up adaptation of new technologies by minimizing the risk associate with it (Dutta & Roy, 2011). With the developed financial infrastructure, foreign firms are able to borrow for innovative activities. Better financial institutions attract greater foreign investment needed to boost the economy. Moreover, Prasad, Rogoff, Wie, and Kose (2003) argued that FDI can boost growth only when recipient country's financial markets are developed enough to channel foreign capital efficiently to finance productive investment. A well-developed financial market is also pre-required for the positive effect of FDI on economic growth (Hermes & Lensink, 2003). Khan (2011) justified the same relationship by arguing that when the country has well-developed financial markets, it is more likely that local suppliers invest in upgrading technology and machinery to provide better inputs. Thus, financial development can be a good signal for the availability of potentially good suppliers.

We have measured the TOI as the ratio of sum of imports and exports to GDP (see also Soumare & Tchana, 2011). It is hypothesized that TOI positively impacts FDI. It is argued that reduction in tariff and removal of quantitative restrictions on imports make the conditions favorable for efficiency-seeking FDI and thus encourage foreign investors for investment. TOI proxies for the degree of liberalization and it measures how friendly a country is for FDI.

TOI also influences horizontal FDI, as at lower TOI, investing firms get benefits from trade barriers through building production sites abroad. Bevan and Estrin (2000) and Resmini (2000) find that vertical inflows largely benefit from increasing openness. Singh and Jun (1995) also find that export orientation is very important in attracting FDI. However, the impact of openness on FDI can have a positive effect if FDI is export-oriented and would be negative if the motivation for FDI is tariff jumping (Aseidu, 2002; Mhlanga, Blalock, & Christy, 2010).

To examine the impact of financial liberalization and TOI on FDI inflows in Pakistan, the log-linear regression model has been used as shown in Equation 1.

$$\ln(\text{FDI})_t = \psi_0 + \psi_1 \ln(\text{MSIZ})_t + \psi_2 \ln(\text{FCF}) + \psi_3 (\text{FLI})_t + \psi_4 (\text{RDR})_t + \psi_5 \ln(\text{TOI})_t + \psi_6 \ln(\text{INFD}) + \psi_7 \ln(\text{TAX}) + \psi_8 \ln(\text{CPI}) + v_t \quad (1)$$

where FDI is the real foreign direct investment, MSIZ is the market size proxied by real GDP, FCF is the real gross fixed capital formation, FLI is the Financial liberalization index, RDR is the real deposit rate, TOI is the trade openness, INFD is the infrastructure development proxied by electricity production, TAX is the net tax real revenue on products, CPI is the consumer price index, and  $v_t$  is the error term.

For analysis, we have used time series data for the years 1971–2009 taken from Annual Reports (State Bank of Pakistan, 2003/2007/2011) and World Development Indicator by World Bank (2003/2005/2009/2010).

In common practice, time series modeling PP test (Phillips & Perron, 1988) is used to determine whether a series possesses a unit root. Elliott, Rothenberg, and Stock (1996) modified Dickey–Fuller test statistics using a generalized least square (GLS). This modified test has best overall performance in terms of small sample size and power, conclusively dominating the ordinary Dickey–Fuller test. In particular, Elliott et al. (1996) found that DF-GLS test has substantially improved power when an unknown mean or trend is present.

Just as the standard Dickey–Fuller test, DF-GLS test may be run with or without a trend term; there are two forms of DF-GLS: GLS detrending and GLS demeaning. With GLS detrending, the series to be

tested is regressed on a constant and linear trend, and the residual series is used in a standard Dickey–Fuller regression. With GLS demeaning, only a constant appears in the first-stage regression; the residual series is then used as the regressand in a Dickey–Fuller regression.

Any test involving an augmented Dickey–Fuller regression is sensitive to the lag length (number of lagged differences with which the regression is augmented). In the DF–GLS test, a maximum lag order may be specified, or the default value (calculated from the sample size using a rule provided by Schwert, 1989) may be used. If the maximum lag exceeds one, the test is executed for each lag, with the sample size held constant at the maximum feasible for that maximum lag order. An estimate of the optimal lag order as chosen by the Ng–Perron (1995) sequential *t*-test criterion is provided. This criterion selects the appropriate lag order, starting with the maximum lag and testing the highest lag’s coefficient for significance. When the *p*-value falls below .10, that lag is retained and the optimal lag is indicated. The lag producing the optimal Schwarz criterion (SIC or BIC) is also printed; it should be noted that Ng and Perron have shown that the SIC-selected lag may lead to a test with very low power in the presence of a large negative moving average component in the error process. Thus, the lag length chosen by the Ng–Perron criterion is generally preferred. Critical values for the GLS detrending test are given by Elliott et al. (1996), and interpolated values are provided by the DF–GLS routine. Critical values for the GLS demeaning test are those applicable to the no-constant, no-trend Dickey–Fuller test; interpolated values are provided by DF–GLS. In the current study, DF–GLS test is employed.

To estimate the cointegration relationship, we have used the autoregressive distributed lag (ARDL) model. The system has the following estimation advantages in comparison with other cointegration methods. First, the long- and short-run parameters of the model are estimated simultaneously. Second, all variables are assumed to be endogenous. Lastly, it is applicable whether the underlying variables are *I*(0), *I*(1), or fractionally integrated. The ARDL method is based on unrestricted error correction model as follows:

$$\begin{aligned} \Delta \ln(\text{FDI})_t = & \beta_0 + \beta_1 \sum_{j=1}^k \Delta \ln(\text{FDI})_{t-j} + \beta_2 \sum_{j=0}^k \Delta \ln(\text{MSIZ})_{t-j} + \beta_3 \sum_{j=0}^k \Delta \ln(\text{FCF})_{t-j} + \beta_4 \sum_{j=0}^k \Delta(\text{FLI})_{t-j} \\ & + \beta_5 \sum_{j=0}^k \Delta(\text{RDR})_{t-j} + \beta_6 \sum_{j=0}^k \Delta \ln(\text{TOI})_{t-j} + \beta_7 \sum_{j=0}^k \Delta(\text{INFD})_{t-j} + \beta_8 \sum_{j=0}^k \Delta(\text{TAX})_{t-j} \\ & + \beta_9 \sum_{j=0}^k \Delta(\text{CPI})_{t-j} + \omega_1 \ln(\text{FDI})_{t-1} + \omega_2 \ln(\text{MSIZ})_{t-1} + \omega_3 \ln(\text{FCF})_{t-1} + \omega_4 \ln(\text{FLI})_{t-1} \\ & + \omega_5 \ln(\text{RDR})_{t-1} + \omega_6 \ln(\text{TOI})_{t-1} + \omega_7 \ln(\text{INFD})_{t-1} + \omega_8 \ln(\text{TAX})_{t-1} \\ & + \omega_9 \ln(\text{CPI})_{t-1} + \mu_{1t} \end{aligned} \quad (2)$$

The terms with summation signs in Equation 2 represent the short-run dynamic, and without summation represent the long-run dynamics. The overall *F*-tests are used for testing the existence of a long-run relationship. The null hypothesis defined by  $\langle H_0: \omega_1 = \omega_2 = \omega_3 = \omega_4 = \omega_5 = \omega_6 = \omega_7 = \omega_8 = \omega_9 = 0 \rangle$ , is tested against the alternative hypothesis,  $\langle H_1: \omega_1 \neq \omega_2 \neq \omega_3 \neq \omega_4 \neq \omega_5 \neq \omega_6 \neq \omega_7 \neq \omega_8 \neq \omega_9 \neq 0 \rangle$ . The conclusion is drawn with the help of the following rule. If the computed *F*-statistic lies above the upper bound [*I*(1)], then the null hypothesis can be rejected at a conventional level of significance, say 1, 5, or 10% suggesting a cointegrating relationship among the variables. On the other hand, if the computed *F*-statistic lies below the lower bound [*I*(0)], the null hypothesis cannot be rejected indicating no cointegration in the relationships. Critical values of the lower and upper bounds have been derived from Turner (2006) response surface, according to the sample size. However, conclusive inference cannot be made when the test statistic falls within the lower and upper bounds. In this case, the time series properties must be known before any conclusion is drawn (Pesaran, Shin, & Smith, 2001). When a long-run relationship exists, the *F*-test indicates which variable should be normalized.

#### 4. Estimated results

The results of the time series unit root property using DF-GLS test have been shown in Table 1. The lag length is determined by using the Ng-Perron criterion in DF-GLS test. All the series were non-stationary at level, but they became stationary at first difference.

The cointegration results have been reported in Table 2. The critical values are derived by using Turner (2006) response surface because the critical values computed by Pesaran et al. (2001) may not be valid for a small sample data of 37 observations in our study. By employing the system illustrated by Turner, we have estimated the critical values of the upper and the lower bounds for the *F*-test at 1, 5, and 10% level of significance. They have been shown in Table 2. The figures illustrate that cointegration exists at 5% level of significance.

Since the cointegration investigation verifies the existence of long-run affiliation among FDI, market size proxied by GDP, gross fixed capital formation, FLI, real deposit rate (RDR), TOI, infrastructure proxied by electricity production, net tax revenue on product, and inflation. To recognize the importance of these variables for their impact on FDI in the long run, we estimated the elasticity. The estimated long-run coefficients are shown in Table 3.

All the determinants of FDI are significant except market size (GDP). The results imply that

- One percent increase in TOI and FLI leads to 6.297 and 4.188 decrease in FDI in Pakistan (by taking the antilog of the coefficient).
- One percent increase in RDR leads to 1.175 decline in FDI (by taking the antilog of coefficient).

**Table 1. Results of unit root tests**

Variable	DF-GLS test	
	Level	1st difference
FDI	-1.549706	-4.119503***
MSIZ	-1.134069	-4.551713***
FCF	-2.305007	-3.602561**
FLI	-1.939400	-3.328243**
RDR	-1.887264	-6.142188***
TOI	-2.533448	-4.374205***
INFD	-.554890	-3.093808*
TAX	-1.087157	-6.639755***
CDI	-1.681522	-3.116761*

\*\*\*Significance level at 1%.

\*\*Significance level at 5%.

\*Significance level at 10%.

**Table 2. Cointegration results**

<i>F</i> -statistics (%) = 6.435		
Critical value	Critical value	
	Lower bound	Upper bound
1	5.14	6.87
5	3.57	4.92
10	2.92	4.11

Note: Critical values are derived from Turner (2006) response surface.

**Table 3. Long-run coefficients**

Dependent variable	ln (FDI)				
	Variable	Coefficient	Std. error	t-Statistic	Prob.
MSIZ		-10.816	10.459	-1.034	.309
FCF		7.091	2.289	3.096*	.004
FLI		-1.432	.337	-4.245*	.000
RDR		-.161	.049	-3.270*	.002
TOI		-6.297	3.069	-2.051**	.049
INFD		14.933	4.503	3.3161*	.002
TAX		-5.012	1.877	-2.670**	.012
CPI		7.665	1.982	3.867*	.000
Constant		-43.928	61.265	-.717	.479

\*\*Significance level at 5%.

\*Significance level at 10%.

- One percent increase in net tax on product (TAX) leads to 5.012% decline in FDI.
- One percent increase in fixed capital formation (CFC), inflation (CPI), and infrastructure development (INFD) leads to increase in FDI by 7.091, 7.665, and 14.933%, respectively.

The short-run coefficients are shown in Table 4. The results indicate that market size (proxied by GDP), TOI (at one year lag), infrastructure development proxied by electricity production, and tax (at one year lag) positively impact the FDI in Pakistan. The RDR and tax negatively impact the FDI in the short run. The error correction term according to the expectation is negative and statistically

**Table 4. Short-run coefficients**

Dependent variable	DFDI				
	Variable	Coefficient	Std. error	t-Statistic	Prob.
DMSIZ		14.549	3.326	4.374*	.000
DFCF		.932	1.094	.852	.403
DFLI		.249	.240	1.039	.309
DRDR		-.112	.013	-8.486*	.000
DTOI		-1.063	.756	-1.406	.173
DTOI(-1)		5.586	.872	6.401*	.000
INFD		6.608	1.547	4.270*	.000
DTAX		-4.732	.684	-6.918*	.000
DTAX(-1)		2.678	.661	4.048*	.000
DCPI		-1.323	1.303	-1.015	.321
Constant		-.891	.216	-4.115*	.000
ECMT(-1)		-1.002	.070	-14.248*	.000
R <sup>2</sup> = .940		Mean dependent var. = .130			
Adjusted R <sup>2</sup> = .904		SD dependent var. = .874			
SE of regression = .270		Akaike info criterion = .506			
Sum squared resid. = 1.607		Schwarz criterion = 1.122			
Log likelihood = 4.878		Hannan-Quinn criter. = .721			
F-statistic = 26.515		Durbin-Watson stat. = 2.145			
Prob. (F-statistic) = .000					

\*Significance level of 5%.



significant. It shows 100.2% age correction of short-run disequilibrium to long-run equilibrium in every year.

## 5. Discussion

Pakistan adopted the policies of trade liberalization and financial liberalization in early 1980s to enhance the economic growth of the country. These programs and policies were also focused to attract FDI in the economy. They include credit facilities, tariff reduction, and easing foreign exchange control. The establishment of an interbank foreign exchange market was an important step toward liberalization of foreign exchange market. Opening up of the agriculture, telecommunication, energy and insurance to FDI, liberalization of import policy, and protection of foreign currency account were the salient features of the liberalization regime.

The economic literature indicated that FDI is an important determinant of economic growth particularly in developing economies. Like many other developing economies, Pakistan has opened doors for FDI. For this purpose, the Foreign Private Investment (Promotion and Protection) Act 1976 under which each foreign investment was subject to separate authorization has been removed. Now no separate regulation is required for FDI, but same rules and regulations are applied to FDI as to domestic investors. One of the most important measures for enhancing the FDI is liberalization of foreign exchange regime. The foreigners using foreign exchange have access to capital market. A large number of quantitative restrictions and non-tariff barriers have been removed and the negative and prohibited list of imports has also been removed. Export incentive has also been broadened. Special Industrial Zones have been set up to attract foreign investment in export-oriented industries. The government is responsible for providing necessary infrastructure and utility services in these zones. Hefty fiscal incentives are given to foreign investors in the special zones, which include income tax holiday for a period of 10 years. Foreign investment in Pakistan is protected through the Constitutions (Article 24). Section 8 of the Protection of Economic Reforms Act 1992 provides legal cover to foreign investment in Pakistan. But unlike China and India, Pakistan has not been succeeded in obtaining substantial and consistent FDI inflows. It instigated the current study to analyze the effect of liberalization policies along with supporting variables on FDI in Pakistan.

The results indicate that liberalization policies proxied by TOI and FLI, along with RDR, negatively affect the FDI inflow in Pakistan. The explanation for the negative impact of TOI on FDI<sup>3</sup> is based on foreign firms' investment motives in the host country. One motive of the foreign investors is to invest in host country on the basis of cost and incentives. If trade cost in the host country is higher, it will discourage FDI. Increasing trade costs provides disincentives to foreign firms and discourages FDI (see also Faini, 2004). In case of Pakistan, the higher costs are justified by the growing increase in energy prices and taxation. The role of taxation is corroborated by the results of variable, tax production revenue. It has shown negative impact on FDI. The negative impact of TOI on FDI could also be justified on the grounds that risk and uncertainty factor affect the investors' decisions. The lack of credibility regarding the consistency of trade liberalization policies could be one of the main reasons that adversely affect investors' decisions about the long-run investment. Thus, due to the risk and uncertainty and lack of credibility regarding the liberalization policies, foreign investors save the cost by taking decisions not to invest in a risky country like Pakistan as compared to domestic investment costs. The credibility and uncertainty factor is related with corruption, shortage of energy in the last two decades, and political instability in the history of Pakistan. The fight against terrorism in the last two decades along with internal problems of Karachi and recent civil unrest in Balochistan has also diminished the credibility of the nation. In the 1980s, the Afghan *Jehad* has also played a role. Another explanation with particular reference to Pakistan about negative relationship between trade liberalization and FDI is possibly due to the fact that major chunks of FDI goes to non-manufacturing and services sector, while the export sector, particularly textile sector, has been receiving a minimum share of FDI. The other reason could be the increase in imports due to reduction in tariff and elimination of other trade barriers after signing the TRIPS agreement under WTO regime, which makes overall impact of trade on FDI negative. The existence of monopolies of MNCs could be another reason of negative relationship between TOI and FDI.

The negative impact of financial liberalization on FDI negates the findings by a variety of studies, for instance, Campos and Kinoshita (2010 for Eastern Europe and Latin America), Khan (2011 for Pakistan), Alfaro et al. (2004), Hermes and Lensink (2003), Al Nasser and Soydemir (2010 for Latin America), Hagen and Zhang (2007), and Dutta and Roy (2011).

The explanation particularly in the case of Pakistan may be that the funds for financial intermediaries have not been used to promote investment activities in the economy. In the financial liberalization period, commercial banks have allocated funds to selective people and sponsors of leading political parties. The credit disbursement to private section was generally based on political considerations rather than on economic considerations. As a result, the vested group has accumulated huge amount of non-performing loans. Corruption at both ends, i.e. in financial institutions and of loanees, has also played a role to crack the link between FDI and financial liberalization. The other reason that could be the explanation is that financial deepening means an increase in treasury operations of financial institutions rather than increase in the lending for investment activities.

The market size (real GDP) has shown no significant effect on FDI. The reason may be the mass poverty in the economy during the study period, which affects the demand side and mass illiteracy and lack of training and skill that affect the input supply side. The tax revenue of product negatively affected FDI. It is justified earlier that cost incentive to the foreign investors is lacking in the economy. On the other hand, the gross fixed capital formation, infrastructure development, and inflation positively influenced the FDI in Pakistan (see Khan, 2011; Khan & Samad, 2010 for infrastructure). The explanation for the positive influence of domestic investment and infrastructure development on FDI may be that when the recipient country provides conducive environment for business and investment, such as infrastructure facilities, availability of inputs, skilled labor, and technologies, it not only affect the domestic investment but also provide incentives to foreign investors to invest more in the host country.

## 6. Conclusion and policy implications

The objective of the current study was to estimate the determinants of FDI in Pakistan mainly focusing on liberalization policies. We have seen the negative impact of liberalization policies (TOI and financial liberalization) and RDR on FDI inflow in Pakistan, while capital formation, infrastructure development, and inflation have shown positive impact on FDI. From the results, it may be concluded that liberalization policies, both trade liberalization and financial liberalization policies, are not enough to change the character of FDI. It may also be concluded that Pakistan is facing serious problems in implementation of foreign investment policies.

To have the benefits of FDI through liberalization policies, the certainty and credibility of liberalization policies need to be improved that may be through the removal of corruption, removal of monopolies of big loanees from the private financial sector, and political stability. The investment environment needs improvement particularly in the perspective of energy crisis and terrorism. By providing the good investment environment, not only the FDI may be attracted but it may also be directed to manufacturing and production sector.

According to the classical trade theory, the cross-country differences in factor endowment of economies result in the relative price differential, which gives rise to international trade. The increase in the rates of return gives rise to capital flows in the form of FDI. The negative impact of taxation on FDI has been shown in the results. The rate of return should be enhanced through tax incentive to foreign investors, market development, and provision of input resources. Similarly, the improvement in infrastructure directly and indirectly by increasing the rate of return may play a role. The government should focus on these areas for making the FDI attractive for foreign investors.

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#### Notes

1. Pakistan may establish its political ties with major international powers like United States on the basis of mutual interests and dignity.
2. Campos and Kinoshita (2010) and Khan (2011 for Pakistan) have used three broad categories of the determinants of modeling FDI, i.e. classical factors like infrastructure, policy-related factors such as financial development and openness, and institutions and democracy-related factors like political rights, civil liberties, and political repression.
3. Azam (2010) for SAARC (South Asia Association for Regional Corporation) countries, Campos and Kinoshita (2010) for transition economies, and Khan (2011) for Pakistan have similar findings.

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