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Abstract

This paper examines causality between FDI, GDP, Exports and Domestic Investment by using Granger and multivariate Granger causality tests. The study also employs gravity based panel model to investigate the impact of FDI inflows from trade partners on GDP, trade and domestic investment in Pakistan. The results show that two-way causality runs between GDP, domestic investment and FDI, while unidirectional causality is detected from exports to FDI. Our panel data estimation confirms the positive role of FDI inflows in GDP and domestic investment while the results shows that the role of FDI is insignificant in case of exports and imports. Similarly, the concentration and sporadic FDI inflows from a few trade partners is adversely affecting GDP and increases imports without affecting domestic investment and exports. On the other hand minor FDI inflows from trade partners significantly contribute to GDP and decreases imports.

Keywords: trade partners, causality, gravity model, concentration,

JEL Classification: F14, F21

1. Introduction

Economic theory has identified a number of channels through which FDI inflows may be beneficial for economic development of a country, depending on the dynamics, volume and quality of investment. It is considered that the overall impact of FDI is positive if attracted by comparative advantage of a country while the role of rent seeking FDI is detrimental to growth and development. But, in economics, the positive role of FDI acquired the status of axiomatic truth, where FDI is considered as a panacea for all the economic problems. As a resultant, FDI received great attention from economists where they analyzed the role of FDI from various aspects.

Based on aggregate FDI data, a number of empirical studies concluded that FDI has a positive impact on the long term economic growth, trade and domestic investment of a host country, while sectoral and spatial analysis of FDI shows that the role of FDI across sectors and time varies a lot. Despite the fact that the flow of FDI to developing

countries increased but to a handful of areas. A number of studies have detected sectoral and spatial concentration of FDI (Khan and Kim 1999; Bitzenis et al, 2007) while others noticed the adverse impact of FDI concentration (Fry 1996). The sectoral analysis of FDI shows that FDI exhibit marginal to substantial improvement in some sectors while in others FDI plays a significant role, even when the overall impact of FDI is not significant. However, hardly any study dares to look at the impact of sporadic inflows and concentration of incoming FDI from a few regions and countries.

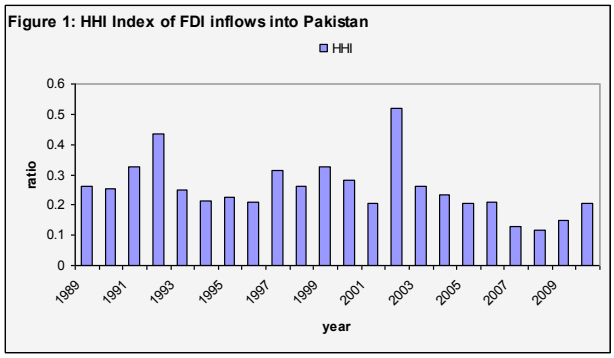
Therefore, the impact of FDI inflow in developing countries is still not clear and depends on the flow and motive behind such investment. In the last two decades the FDI inflows to Pakistan increased many fold to a few areas, while the number of countries investing in Pakistan increased; but large portion of FDI is still coming from a few traditional investors. The FDI inflows to Pakistan are not only concentrated but sporadic as well. Interestingly, the major investors in Pakistan are also major trade partners of Pakistan. Therefore, it is important to know the causal link of FDI inflows from trade partners with growth, trade and domestic investment and measure the impact of the concentrated FDI inflows on exports, domestic investment and growth in Pakistan.

We divided our study into two parts. In the first part we use the Granger causality tests, including suggested by Toda and Yamamoto (1995), to check the directions of causality between FDI, growth, trade and domestic investment. While in the second part, the paper endeavors to empirically investigate the role of parent to affiliate trade by using gravity model and panel estimation techniques.

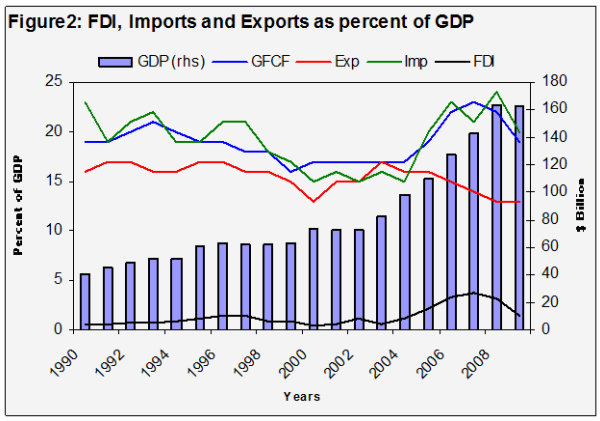
The rest of the paper is organized as follows. Section 2 discusses the dimensions of FDI in Pakistan, section 3 deals with a brief review of the existing empirical studies. Section 4 discusses the data and methodological issues. Section 5 consists of empirical results and discussion, while section 6 provides conclusion.

2. Dimensions of FDI Inflows into Pakistan

Since the introduction of financial reforms and shift towards market oriented policies in early 1990's, the number of countries investing in Pakistan increased. Compared to just 29 countries at the time of reforms in early 1990's; in 2000, a total of 86 countries invested in Pakistan. By 2003 that number had increased to 106 countries. However, the contribution from new investors was nominal. A major portion of FDI is still coming from traditional investors i.e. the U.S, the U.K and the U.A.E. FDI concentration (using Herfindhal-Hirschman index) in Figure 1 shows that the geographic concentration of FDI in Pakistan decreased substantially except in 2002, when the share of FDI from the US increased abruptly and reached 70 percent of the total FDI inflows, despite the fact that Pakistan assumed the role of front line state against the war on terror. In subsequent year, the inflows of FDI increased, while the contribution of major investors to FDI decreased.



FDI and trade of home and host countries are, as has been noted, generally complementary. Liberal trade and investment regimes boosted FDI and strengthened the positive relationship between FDI and trade in Pakistan. A study by Mohsin et al. (2004) confirmed that a shift from an inward looking to outward looking policy regime enhances the inflow and trade impact of FDI in Pakistan. Shirazi and Manap (2005) reached the same conclusion. Figure 2 show that GDP, domestic investment, import and FDI seems to reinforce each other.



3. Literature Review

In developed countries GDP, as an indicator of market size, has great attraction for FDI. Kasibhatla and Sawhney (1996) confirmed a unidirectional causality from GDP to FDI in the U.S. In developing countries the causation usually runs from FDI to GDP. For example, in India, Dua and Rashid (1998) noted causality from FDI to economic growth in the period of 1992-1998, while Chakraborty and Basu (2002) using annual data from 1974-1996 confirmed the reverse causality from economic growth to FDI. Similarly, Ericsson and Irandoust (2001) examined the causality between FDI and growth for four OECD countries, namely Denmark, Finland, Norway and Sweden. They, however, do not find any causality between FDI and economic growth in Denmark and Finland, but suggested that specific dynamics and nature of FDI entering these countries could be responsible for no-causality results. Zhang (2001) has tested the FDI-led growth hypothesis in East Asian and Latin American countries and confirmed that FDI causes economic growth in some countries while in others growth causes FDI. Liu et al. (2002) examined the presence of long run relationship among FDI, growth and exports in China during 1981-1997 period.

It is considered that FDI inflow due to country's comparative advantage supplements domestic investment, accelerate economic growth and increase trade **(**Kojima and Terutoma, 1984). Studies by Borensztein et al. (1998), Bulasubramanyam et al. (1996) and Li and Liu (2005) confirmed the role of FDI in growth. Obwona (2004) noted that the inflow of FDI is positively correlated with growth. Same is the result drawn for China by Dees (1998). Bezuidenhout (2009) regards FDI as an inducer of growth if its inflows are properly managed.

A similar finding is that FDI increases growth and improve productivity by introducing latest technology and technical know how (Feenstra and Markusen, 1992). Based on the proposition that FDI promotes production efficiency and technology, Yao and Wei (2007) concluded that FDI increased the growth of newly industrializing economies and helped them catch up with developed economies.

There is a growing literature on the FDI-export nuxes (Lardy, 1994; Naughton,

1996; UNCTAD, 2002; Zhang, 2005; Zhang and Song, 2000). FDI inflows from trade partners encourage parent to affiliate trade that occupies almost half of world trade flows (Hejazi et al. 2001). Other than the capital augmenting element, some economists see FDI as having a direct impact on trade in goods and services (Markussen and Vernables, 1998). Trade theory expects FDI inflows to increase host countries' exports competitiveness (Blomstrom and Kokko, 1998). But the role of FDI in export promotion remains controversial and depends crucially on the basic motives of foreign investment (World Bank, 1998).

Recently, Albuquerque et al. 2005; Lane and Milesi-Ferretti, 2005; Rose and Spiegel, 2004, examined the interactions between financial flows and trade. The main finding of such literature supports the argument that the larger inflows of FDI complement trade and improve the total factor productivity in a host countries.

A comprehensive study by Bosworth and Collins (1999) provides evidence concerning the effect of capital inflows on domestic investment for 58 developing countries during 1978-95. The study by Razin and Sadka (2002) argued that FDI increases efficiency of domestic capital by increasing its proper allocation across firms. FDI inflows also enlarge the size of the aggregate stock of domestic capital. Similarly, Razin et al. (2002) find that the effect of FDI inflows on domestic investment is significantly larger than that of portfolio equity or loan inflows.

4. Methodology and Data

4.1 Granger Causality:

In order to test for direct causality between FDI and GDP we perform a Granger causality test using equations (1) and (2):

$$GDP_t = \gamma + \sum_{i=1}^{k} \alpha_i \cdot GDP_{t-i} + \sum_{i=1}^{k} \beta_i \cdot FDI_{t-i} + \mu_t \qquad (1)$$

$$FDI_t = \phi + \sum_{i=1}^{k} \delta_i \cdot GDP_{t-i} + \sum_{i=1}^{k} \lambda_i \cdot FDI_{t-i} + \eta_t \qquad (2)$$

Where GDP_t and FDI_t are stationary time series sequences. γ and ϕ are the respective intercepts. μ_t and η_t are white noise error terms and k is the maximum lag length used in each time series. The optimum lag length is identified using Hsiao's (1981) sequential procedure, which is based on Granger's definition of causality and Akaike's minimum final prediction error criterion. If in equation (1) $\sum_{i=1}^{k}\beta_i$ is significantly different from zero, then we conclude that FDI Granger causes GDP. Separately, if $\sum_{i=1}^{k}\delta_i$ in equation (2) is significantly different from zero means that GDP Granger causes FDI. Granger causality in both directions is, of course, a possibility. On the same line, we test causality between FDI and Export and FDI and Domestic investment.

4.2) Toda and Yamamoto Augmented Granger Causality Test:

It is observed that the traditional F-test is ineffective when the variables display an integrated or cointegrated structure and the test statistics lack a standard distribution (Zapata and Rambaldi, 1997). In such scenario, when the data is integrated or cointegrated, the usual tests applied for exact linear restrictions on the parameters (e.g. the Wald test) do not exhibit usual asymptotic distributions. To deal with this problem and avoid stationarity and cointegration test before running the granger causality test, we can use the procedure of augmented granger causality test proposed by Toda and Yamamoto (1995). This procedure modified Wald test (MWald) for restrictions on the parameters of a $VAR(k)$, where k is the lag length in the system. When $VAR\ (k+d_{\max})$ is predicted (where $d_{\max}$ is the maximal order of integration to occur in the system), this test displays asymptotic chi-square distribution. It is considered that if variables are integrated of order d, the usual selection procedure is valid whenever $k \geq d_{\max}$. The lag length of the level VAR system was determined by minimizing the Akaike information criterion (AIC) and the Schwarz Bayesian criterion (SBC).

Toda and Yamamoto test is indifferent to level or first order of integration. However, I(2) can affect the results. Therefore, we perform a stationary test to determine the order of integration for each time series using the augmented Dickey-Fuller test (ADF) (1979) and Phillips-Perron test (PP) (1988) before applying Augmented Granger test. The augmented Granger causality test suggested by Toda and Yamamoto (1995); Zapata and Rambaldi (1997) in our case is:

$$\log GDP_t = \alpha + \sum_{i=1}^{K} \beta_i \log GDP_{t-i} + \sum_{j=K+1}^{d_{\max}} \beta_j \log GDP_{t-j} + \sum_{i=1}^{K} \lambda_i \log Export_{t-i} + \sum_{j=K+1}^{d_{\max}} \lambda_j \log Export_{t-j} + \sum_{i=1}^{K} \delta_i \log FDI_{t-i} + \sum_{j=K+1}^{d_{\max}} \delta_j \log FDI_{t-j} + \sum_{i=1}^{K} \psi_i \log DI_{t-i} + \sum_{j=K+1}^{d_{\max}} \psi_j \log DI_{t-j} + \varepsilon_{1t} \quad (3)$$

$$\log Export_t = \gamma + \sum_{i=1}^{K} \varphi_i \log Export_{t-i} + \sum_{j=K+1}^{d_{\max}} \varphi_j \log Export_{t-j} + \sum_{i=1}^{K} \mu_i \log GDP_{t-i} + \sum_{j=K+1}^{d_{\max}} \mu_j \log GDP_{t-j} + \sum_{i=1}^{K} \theta_i \log FDI_{t-i} + \sum_{j=K+1}^{d_{\max}} \theta_j \log FDI_{t-j} + \sum_{i=1}^{K} \pi_i \log DI_{t-i} + \sum_{j=K+1}^{d_{\max}} \pi_j \log DI_{t-j} + \varepsilon_{2t} \quad (4)$$

$$\log FDI_t = \partial + \sum_{i=1}^{K} \Gamma_i \log FDI_{t-i} + \sum_{j=K+1}^{d_{\max}} \Gamma_j \log FDI_{t-j} + \sum_{i=1}^{K} \tau_i \log GDP_{t-i} + \sum_{j=K+1}^{d_{\max}} \tau_j \log GDP_{t-j} + \sum_{i=1}^{K} \Pi_i \log Export_{t-i} + \sum_{j=K+1}^{d_{\max}} \Pi_j \log Export_{t-j} + \sum_{i=1}^{K} \omega_i \log DI_{t-i} + \sum_{j=K+1}^{d_{\max}} \omega_j \log DI_{t-j} + \varepsilon_{3t} \quad (5)$$

$$\log DI_t = \varsigma + \sum_{i=1}^{K} \zeta_i \log DI_{t-i} + \sum_{j=K+1}^{d_{\max}} \zeta_j \log DI_{t-j} + \sum_{i=1}^{K} \varepsilon_i \log GDP_{t-i} + \sum_{j=K+1}^{d_{\max}} \varepsilon_j \log GDP_{t-j} + \sum_{i=1}^{K} \rho_i \log Export_{t-i} + \sum_{j=K+1}^{d_{\max}} \rho_j \log Export_{t-j} + \sum_{i=1}^{K} \vartheta_i \log FDI_{t-i} + \sum_{j=K+1}^{d_{\max}} \vartheta_j \log FDI_{t-j} + \varepsilon_{4t} \quad (6)$$

GDP is the value of Pakistan GDP, FDI is the FDI inflows to Pakistan from trade partners, and exports and DI are the values of Exports and Domestic Investment. All the

values are expressed in million of U.S. dollars. The error terms $\varepsilon_{1t}, \varepsilon_{2t}, \varepsilon_{3t}$ and ε_{4t} are white noise with zero mean, constant variance and no autocorrelation.

In equation (3), causality implies that Export "Granger-causes" 'GDP only if λi≠ 0∀i and FDI "Granger-causes" 'GDP in case if δi≠ 0∀i. similarly, DI "Granger-causes" GDP if ψi≠ 0∀i. In the same manner in equation (4) 'GDP' 'FDI' and 'DI' Granger-causes' Export if μi ≠ 0∀I, θi ≠ 0∀I and πi ≠ 0∀i. In equation (5), causality implies that GDP and DI "Granger-causes' 'FDI provided that τi ≠ 0∀i and ωi ≠ 0∀i and Export "Granger-causes' 'FDI provided that Ji≠ 0∀i. Finally in equation (6), GDP, FDI and Exports granger causes DI subject to the condition that Эi≠ 0∀I, ρi≠ 0∀I, Øi≠ 0∀i

4.3 Panel Data Estimation

This paper uses panel based gravity model to study the role of FDI inflows from trade partners on growth, imports and exports. Castilho and Zignago (2002) used gravity model for Mercosur member states and confirmed strong relationship between FDI and imports. Similar relations were observed by others including Blonigen et al. (2007), Zwinkels and Beugelsdijk (2010) etc. Following model 7, 8, 9 and 10 determine the relationship between FDI, growth, exports, imports and domestic investment, respectively.

$$\log PGDP_t = \alpha_0 + \alpha_1 \log FDI_{jt} + \alpha_2 \log GDP_{jt} + \alpha_3 D_j + \alpha_4 \log Exp_{jt} + \alpha_5 \log Mpt_{jt} + \alpha_6 A + \mu_{jt} \quad (7)$$

$$\log Mpt_t = \beta_0 + \beta_1 \log FDI_{jt} + \beta_2 \log PGDP_t + \beta_3 \log GDP_{jt} + \beta_4 D_j + \beta_5 \log Exp_{jt} + \beta_6 A + \varepsilon_{jt} \quad (8)$$

$$\log Exp_{jt} = \gamma_0 + \gamma_1 \log FDI_{jt} + \gamma_2 \log PGDP_t + \gamma_3 \log GDP_{jt} + \gamma_4 D_j + \gamma_5 \log Mpt_{jt} + \gamma_6 A + \xi_{jt} \quad (9)$$

$$\log DI_t = \theta_0 + \theta_1 \log FDI_{jt} + \theta_2 \log PGDP_t + \theta_3 \log GDP_{jt} + \theta_4 A + \nu_{jt} \quad (10)$$

Where 'j' and 't' are indices for trade partners and time period, respectively. Exp_{jt}

is bilateral export flows between Pakistan and country j at time t; Mpt_{jt} is bilateral import flows between Pakistan and country j at time t; FDI_{jt} is the FDI inflows into Pakistan from a trade partner j at time t; DI_t is the domestic investment; $PGDP_t$ is the gross domestic product of Pakistan at time t, GDP_{jt} is gross domestic product of country j at time t. All these variables are expressed in millions of US dollars and presented in log form. D_j is the distance in kilometers between Pakistan and country j and A is the dummy for FDI concentrations. Dummy takes the value of 1 if a major trading partner share in total FDI is more than 5 percent in a year, otherwise 0. $\mu_{jt}, \varepsilon_{jt}, \xi_{jt}$ and ν_{jt} are the usual error terms.

In this study we use annual data from 1981 to 2010 for causality and from 1990 to 2010 for panel data estimation. All the data for Pakistan and its 20 trade partners, except for distance[2], is collected from World Bank Development Indicators and from the Handbook of Statistics on Pakistan Economy 2010, published by State Bank of Pakistan.

5. Empirical Results and Discussion

5.1 Granger Causality Results

Granger Causality results in table 1 detected feedback effect between FDI and GDP and FDI and domestic Investment. In case of trade, a unidirectional causality runs from exports to FDI.

Table 1: Granger Causality Test

Null Hypothesis:	F-Statistic	Prob.
Domestic Investment does not Granger Cause FDI	8.779	0.0015*
FDI does not Granger Cause Domestic Investment	9.554	0.0009*
Exports does not Granger Cause FDI	6.588	0.0056*
FDIY does not Granger Cause Exports	2.0041	0.1515
GDP does not Granger Cause FDI	7.951	0.0024*
FDI does not Granger Cause GDP	4.0221	0.0318*

*significant at 5 percent level

The granger causality based on Augmented Dickey-Fuller test is notorious for its

[2] http://www.distancefromto.net

low power. Therefore, we rely on Augmented Granger Causality test suggested by Toda and Yamamoto.

5.2 Augmented Granger Causality Results

This test can be used for group as well as individual causation among FDI, Exports, GDP and domestic investment.

Step 1: we determine the order of integration by running ADF test. In case of different order, dmax is selected. Our results in table 2 shows that the variables are I (1), therefore dmax=1 is selected.

Table 2: Stationarity Test Results

Variables	ADF		PP		Decision
	Without Trends	With Trends	Without Trend	With Trend	
GDP	6.099	0.3625	6.099	0.3625	
ΔGDP	-1.202	-4.734*	-20.631*	-4.742*	I(1)
FDI	2.536	-0.731	-1.162	-1.967	
ΔFDI	-1.806*	-3.053*	-3.132*	-2.943	I(1)
Exports	3.601	-1.63	3.023	1.871	
ΔExports	-2.981*	-4.004*	-3.04*	-4.031*	I(1)
DI	0.370	-3.452	-1.309	-1.415	
ΔDI	-3.037*	-3.210*	-3.032*	-3.168*	I(1)

* Significant at 5 percent level

Step 2: We determined the lag on the basis of lowest Schwarz and Akaike info criterion. Based on VAR results Schwarz and Akaike info values are given in table 3, where we select 'k'=1.

Table 3: AIC and SIC lag

Lag	AIC	SIC
1	67.55173	68.49469*
2	67.05633*	68.76916
3	67.14739	69.64308

* Significant at 5 percent level

Step 3: After determining that the most appropriate lag length is k=1 and dmax=1, the causal link between export, domestic investment, GDP and FDI series based on the

modified Wald (MWald) test are presented in table 4.

The results in table 4 show that domestic investment (DI) and GDP cause FDI, in combination as well as individually, while the results does not confirm a causation from exports to FDI. Similarly, exports failed to cause other variables, except GDP. FDI causes domestic investment and GDP, however, the role of FDI in causing exports is insignificant. This shows that FDI in case of Pakistan has two-way causality only with GDP and domestic investment, while there is no causality between FDI and exports.

Table 4: Augmented Granger Causality Test

Null Hypothesis:	F- p values	Chi-sq p values
Combined causality of DI, Exports and GDP on FDI	22.4487***	134.6926***
DI does not Granger Cause FDI	10.5847***	21.1695***
Exports does not Granger Cause FDI	0.7116	1.4232
GDP does not Granger Cause FDI	2.8540*	5.7081*
Combined causality of DI, FDI and Exports on GDP	195.3667***	1172.2000***
DI does not Granger Cause GDP	2.3692	4.7385*
Exports does not Granger Cause GDP	3.6900**	7.3801**
FDI does not Granger Cause GDP	5.7037**	6.4075**
Combined causality of FDI, Exports and GDP on DI	125.5547***	753.3282***
FDI does not Granger Cause DI	11.5642***	23.1284***
Exports does not Granger Cause DI	0.5357	1.0715
GDP does not Granger Cause DI	2.4291	4.8582*
Combined causality of DI, FDI and GDP on Exports	127.4926***	764.9558***
DI does not Granger Cause Exports	1.3256	2.6513
FDI does not Granger Cause Exports	7.1882**	14.3764***
GDP does not Granger Cause Exports	6.4762*	12.9524***

*, ** and *** are significance at 1, 5 and 10 percent level, respectively.

5.3 Panel Data Results

We report in table 5 both OLS (Ordinary Least Square) and Random effect results for robustness. However, based on LM (Lagrangian Multiplier) test, the study prefers Random effect technique for GDP, Exports and Imports and Robust OLS for domestic investment. Our results show that FDI plays an important role in the overall growth of Pakistan economy and domestic investment. A one percent increase in FDI increases GDP by 0.1 percent and domestic investment by 0.014 percent. However, the role of FDI in imports and exports are insignificant. This shows that FDI does not contribute to trade.

The dummy for FDI concentration 'A' shows that the concentration of FDI inflows (if more than 5 percent of total in a year) from major trading partner decreases growth as well as exports, while FDI concentration significantly increases imports and remained insignificant in case of domestic investment.

To further investigate the effect of FDI concentration, we changed the role of dummy and assigned values 1 to the countries that contribute less than 5 percent of total FDI in a year and 0 otherwise. Interestingly, the results show that the de-concentrated FDI contributes to GDP and exports, while import decreased with decline in FDI concentration.

Table 5: Panel data estimation

	PGDP		Exports		Imports		Domestic Invest.	
Indept. var.	OLS Robust (1)	RE Robust (2)	OLS Robust (3)	RE Robust (4)	OLS Robust (5)	RE Robust (6)	OLS Robust (7)	RE Robust (8)
Intercept	4.7380 (0.000)*	3.2512 (0.000)*	2.53 (0.000)*	-0.2301 (0.657)	-2.0644 (0.001)*	-2.5512 (0.000)*	-0.097 (0.000)*	-0.097 (0.000)*
FDIj	0.1279 (0.000)*	0.0976 (0.000)*	0.0902 (0.014)*	-0.0043 (0.790)	0.0755 (0.034)*	0.02399 (0.143)	0.0148 (0.001)*	0.0148 (0.001)*
PGDP	-	-	-0.4638 (0.001)*	-0.0905 (0.488)	0.5345 (0.000)*	0.5475 (0.000)*	1.0532 (0.000)*	1.0543 (0.000)*
GDPj	0.0011 (0.505)	0.2322 (0.001)*	0.3078 (0.000)*	0.4282 (0.007)*	0.3560 (0.000)*	0.3832 (0.005)*	-0.005 (0.255)	-0.005 (0.254)
Dj	0.00003 (0.960)	-0.0003 (0.024)*	-0.0001 (0.076)	-0.0002 (0.502)	-0.0007 (0.000)*	-0.0004 (0.290)	-	-
A	-0.2084 (0.000)*	-0.1738 (0.000)*	0.0773 (0.380)	-0.0082 (0.885)	0.1222 (0.090)**	0.06459 (0.081)**	-0.008 (0.350)	-0.008 (0.349)
Xptj	-0.0796 (0.001)*	-0.0437 (0.256)	-	-	0.1191 (0.073)**	0.2068 (0.001)**	-	-
Mptj	0.1043 (0.000)*	0.2339 (0.000)*	0.1354 (0.058)**	-0.0230 (0.002)*	-	-	-	-
obs. No.	287	287	287	287	287	287	287	287
R^2	0.32	0.23	0.32	0.25	0.40	0.35	0.96	0.95
LM	-	0.000	-	0.000	-	0.000		0.251

* and ** is significant at 5 and 10 percent level respectively

Results in column 2 of table 5 shows that the rise in trade partners GDP contributes more to growth in Pakistan compared to that of FDI inflows from those countries. Concentration of FDI from a certain location increases imports but our results shows that the effect of imports on GDP is positive and significant, while the role of

exports in GDP is insignificant. Similarly our model suggests that the impact of FDI and trade on growth in Pakistan decreases as its distance with the trade partners increases.

6. Conclusion

This study reinvestigated the role of FDI in growth, trade and domestic investment. Using multivariate causality test, the study confirmed that two-way causality runs between FDI and domestic investment at the individual as well as group level, while unidirectional causality runs from exports and GDP to FDI. This means that increase in domestic investment attracts more FDI and more FDI results in to enhanced domestic investment. The rainforest of each other by foreign and domestic investment inspire synergy in their impact on economic growth.

Gravity based panel data estimation shows that overall FDI inflows from trade partners play an important role in GDP growth, but the role of FDI inflows are insignificant in exports and imports. However, the dissection of trade partners FDI shows that the sporadic and concentrated FDI inflows adversely affect growth and exports and increase imports, whereas the de-concentrated FDI positively contribute to Pakistan's GDP and exports. The impact of de-concentrated FDI on imports is negative. This shows that pursuit of quantity, Pakistan compromise on the quality of investment. This also shows that in the presence of deteriorating law and order situation, major FDI inflows to Pakistan are attracted by a force other than comparative advantage.

Since the role of over all FDI inflows is positive but the role of concentrated FDI inflows is not up to the mark, particularly in enhancing trade. Therefore, policies should be devised to manage and attract FDI to targeted sectors that coincide with the national development policies. Similarly, continuity of economic policies will increase the confidence of investors and will ensure sustainability of FDI.

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