The Effect of Foreign Direct Investment in Postal and Courier Services on the Economic Growth of Pakistan

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Abstract

Previous studies were limited to analyze the relationship between foreign direct investment and economic growth of Pakistan. The present study is making addition to the literature by analyzing the relationship foreign direct investment inflows in the Postal and Courier Services and economic growth of Pakistan. The time period of the study is from 2005 to 2015. Ordinary least squares, Granger Causality test and Vector Auto regression has been applied for estimating the study results. The main findings of the study show that foreign direct investment inflows in the postal and courier services put a positive and significant and positive impact on the economic growth of Pakistan. The Granger Causality test shows a one directional relationship between the foreign direct investment inflows in postal and courier and economic growth. The VAR test results also supported the overall results. These findings show that foreign direct investment in postal and courier services is also an important indicator of the economic growth of Pakistan.

Keywords: Foreign Direct Investment, Postal and courier services, Granger Causality test.

Introduction

The postal and courier service is considered a compulsory part of the daily lives all over the world. Even with the development of the digital and electronic age the significance of the postal service cannot be underestimated, which is facilitating the lives of millions of people by providing them the most easy and accessible means of

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communication and delivery of messages. In the past although the postal service was not that much developed but it was the only source of delivering information from one place to another. Now a day's the postal and courier services has significantly improved with the introduction of variety of services which not only made it more functional and fast. Moreover, a major part of the world population is connected with this sector for their living.

In most of the developing countries the domestic resources are not enough to fulfill the consumption and investment needs. Although there are many reasons for it, however, some of the reasons for it can be the high population growth rate, low saving, high and persistent inflation, poor infrastructure and transportation sector etc. Hence, a large number of these countries are dependent on advanced economies for the fulfilment of their needs.

Foreign Direct Investment (FDI) is considered an effective tool of transferring investment and boosting growth in the underdeveloped countries. Competition channel, linkages channel and demonstration channel are the three main channels through which it put positive effect on an economy. Whereas, the competition channel raised competition, production and productivity and human and capital stocks and bring changes in the structure of the industries. The linkages channel refers to the transfer of technology to the host and country. Similarly, according to demonstration channel domestic firms imitate the more advanced technologies used by foreign firms.

The global integration amongst the world economies has motivated the underdeveloped countries to adopt liberal policies for attracting and efficient utilization of the foreign investment in the country. Like other developing countries Pakistan has abundant of resources, large market and better geographical location for attracting the FDI in the country. Although number of factors like long march/dharna, energy shortages and war against terrorism remained obstacles in attracting FDI. But now situation is improving because of the investment friendly policy designed by the government of Pakistan. During July-April financial year 2015 FDI inflows posted growth of 10.2% and reached to 2057.3 million US dollars against 1866.3 million dollars during 2014, thus showing a sign of restoring investor's confidence which has set back due to dharnas in first quarter of 2015. The major inflows are from China, US, UAE, UK and Italy. Whereas, Communications, Oil and Gas exploration, financial businesses, power and chemicals remained the main recipient of sectors of FDI.[1]

Previous studies in Pakistan focused on the direct

relationship between the FDI and economic growth, relationship between Greenfield and Brownfield FDI and economic growth. However, no study focused on the relationship between FDI inflows in the Postal and Courier Services and economic growth. The present study is an effort to fill this gap.

The purpose of the present study is to investigate the effect of foreign direct investment inflows in postal and courier services on the economic growth of Pakistan.

Hypothesis of the study

H_0: Foreign direct investment in postal and courier services affecting the economic growth of Pakistan.

H_1: Foreign direct investment inflows in postal and courier services does not affect the economic growth of Pakistan.

Review of literature

Alfaro using an extended dataset, found that the same amount of increase in FDI, regardless of the reason of the increase, generates three times more additional growth in financially well-developed countries than in financially poorly-developed countries.[2] In case of East European countries, according to Neuhause there are three main channels through which FDI can certainly influence the technological sector, improve the capital stocks and generate economic growth: (a) direct transmission through Greenfield investments, indirect transmission through ownership participation"), and second round transmission through information and communication technology spill over.[3]

Kotwal *et al* studied the influence of television advertisements on the purchasing behaviour of class 9^{th} to 12^{th} for two higher secondary government and private girls' schools.[4] The data has been randomly collected from 100 adolescents girls equally divided between the two schools. The results showed that advertisements played an important role in the introduction of new products in the market and buying behaviours' of the families and students. Further it has been found out that the girls spend their monthly pocket money mainly on food, cosmetics, cards and gifts etc.

Karimi and Yusop studied Malaysia's growth-FDI link.[5] According to them, there is a range of possible factors that ensures that FDI promotes or hinders economic growth. At the same time, these determinants are likely to differ between countries and between types of FDI and sectors of destination.

Anwar and Nguyen focused on the Vietnamese "growth-FDI" connection, showed the importance of the role of education and training.[6] The results suggest that the impact of FDI on economic growth in Vietnam will be larger if more resources are invested in education and training, and financial market development, and also invested in reducing the information and communication technology gap between foreign and local firms. They concluded that foreign direct investment, human capital, exports, stable financial system positively affect the economic growth. A similar study has been carried out for studying the impact of foreign direct investment on the economic growth in Pakistan.[7] According to them, foreign direct investment, financial development, public investment, human capital, trade openness put positive impacts on the economic growth. Similarly, Jayachandran and Seilan conducted a study for India and find out that FDI and exports are among the factors affecting economic growth.[8] However, the reciprocal does not apply. The high or low economic growth rate does not have an impact on the presence of FDI and exports in India. Further, FDI inflows exert a positive impact on economic growth, however, only in the presence of highly skilled labour.[9] Moreover, they found that corruption has a negative impact on economic growth, and trade openness increases economic growth by means of efficiency gains.

Obamuyi and Olorunfemi examined the implications of financial reform and interest rate behaviour on the economic growth in Nigeria.[10] Study results revealed that financial reform and interest rates have significant impact on economic growth in Nigeria; also, results implied that the interest rate behaviour is important for economic growth.

Research Methodology

The main objective of the present study is to examine the impact of foreign direct investment on economic growth of Pakistan. For this purpose, annual data for the period 2000-2013 has been collected from various sources including State Bank of Pakistan annual reports, Economic Survey of Pakistan (ESP) various issues and Federal Bureau of Statistics (FBS)

Definition of Variables of the Study

The following section shows the main variables of the study.

Table 1: Definition of Variables

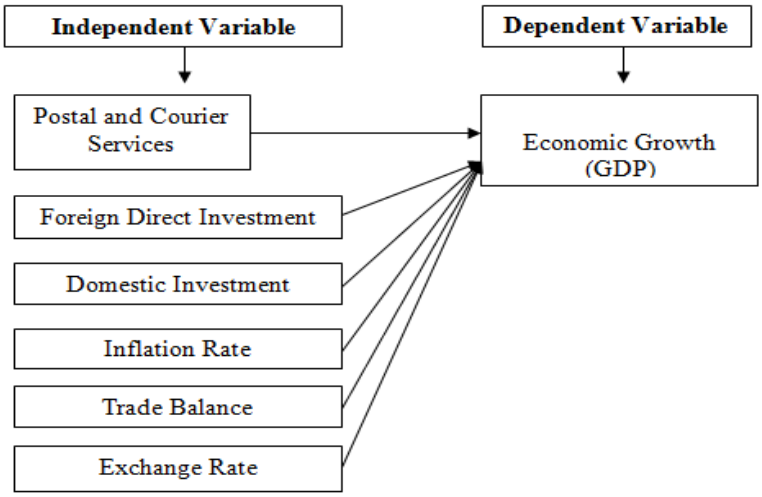
Variables	Definition	Symbols

Economic Growth	Gross Domestic Product of Pakistan in millions of rupees	GDP_{PK}
FDI in Postal and Courier Services	Foreign Direct Investment in millions of millions of rupees	FDI_{PCS}
Domestic Investment	Domestic Investment in millions of rupees	DI
Trade Balance	Total Exports minus total Imports millions of rupees	TB
Inflation	Average annual percentage change in CPI of Pakistan	INF
Exchange Rate	Exchange Rate of Pakistan rupee against US Dollar	EXR

Theoretical Framework

Figure1 shows the theoretical framework of the study. It presents information about the dependent and independent variables and also the directional of the relationship between the variables.

Figure 1: Theoretical Framework



Model for Analysis

The empirical model of the study is based on the Robert Solow Neoclassical growth model. According to Solow the general form of the aggregate production function in an economy is as follows.

$$Y = A\,f\,(K, L)$$

The aggregate production function shows the relationship between the output and inputs, where Y represents the GDP, K stock of capital and L the labour employment level. Whereas, A shows the technological progress in the economy either through K or L.

Because the main goal of the present study is to examine the role of foreign direct investment inflows in postal and courier services in the economic growth of Pakistan. Hence, for this purpose a modified form of the above model has been developed, which is as follows.

$$GDP_{PK} = f(DI, FDI_{PCS}, TB, INF, EXR)$$

However, for estimation purpose the following equation form of the model has been used.

$$GDP_{PK} = \alpha_0 + \alpha_1 DI + \alpha_2 FDI_{PCS} + \alpha_3 TB + \alpha_4 INF + \alpha_5 EXR + u_i$$

In the above equation GDP_{PK} stands for the Gross Domestic Product of Pakistan, DI for the domestic investment, FDI_{PCS} for the foreign direct investment inflows in postal and courier services, TB for the trade balance, INF for the inflation and EXR for the exchange rate. Whereas, u_i is the error term, α_0 is the intercept and $\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$ are the related coefficients.

Results and Discussion

Table 2: Unit Root Tests Results

Variables	Augmented Dickey-Fuller			Phillips – Perron			Decision
	Level	1st diff	2nd diff	Level	1st diff	2nd diff	
Economic Growth (GDP)	0.30414	3.899624	-	0.120297	3.955732	-	I (1)
FDI (Postal & Courier)	3.36743	-	-	1.938163	3.785648	-	I (1)
Domestic Investment	1.91488	2.188716	3.913759	1.32259	2.188716	3.958881	I (2)
Exchange Rate	0.82043	3.170778	-	0.883496	3.1770778	-	I (1)
Inflation	1.64338	3.995869	-	1.521995	6.065064	-	I (1)
Trade Balance	5.69001	-	-	4.865045	-	-	I (0)
Critical Values at Different Level of Significance							
1%	4.0571	4.1299	4.29773	4.05791	4.1299	4.2056	
5%	3.1191	3.1492	3.21266	3.1191	3.1492	3.1752	
10%	2.7010	2.71351	2.74776	2.7113	2.71351	2.72885	

The results show that economic growth, FDI, exchange rate and inflation turned stationary at first difference. Whereas, domestic investment became stationary at second difference. Whereas, trade balance turned stationary at level.

Regression Analysis

The present section presents the regression results which are given in table 3.

Table 3: Regression Results
Dependent Variable:
$GDP_{PK} = \alpha_0 + \alpha_1 DI + \alpha_2 FDI_{PCS} + \alpha_3 TB + \alpha_4 INF + \alpha_5 EXR + u_i$

Independent Variables	Unstandardized Coefficients		
	Co-efficient	Std. Error	P-Value
(Constant)	12.555	.633	.000
DI	-.027	.022	.248
BOT	-3.341E-5	.000	.746
INF	.005	.008	.582
EXR	.010	.005	.087
FDI_{PCSS}	.017	.014	.258
R-Square: .63			
Adj. R-Square: .61			
Durbin Watson Statistic: 1.90			

The above table shows the results of the regression test of FDI_{PCS}, DI, TB, INF and EXR on economic growth (GDP). The test was used to check the cause and effects of the variables. The R value in the table is .63 which shows that the variables are 63 percent correlated to each other. The value of R-square is .61 which is coefficient of determination, showed that FDI_{PCS}, DI, TB, INF and EXR have 61 percent effects on the GDP. The f-ratio of the model is 25.7 which are higher than standard value i.e. 4, means that the model is statistically significant. The p-value also showed that overall model is significant. The beta of FDI_{PCS} is .129 which showed per unit change in the GDP due to FDI_{PCS}. The change will be positive in response to the FDI_{PCS}. The t-value of FDI_{PCS} is .129 which is less than the standard value i.e. 2, means that the t-value is lower than 2. The p-value of the FDI_{PCS} is .248 which is higher than 0.05 means that the FDI_{PCS} has positive and insignificant effects on GDP. The beta of DI is -.369 which showed per unit change in the GDP due to DI. The change will be negative in response to the DI. The t-value of DI is -.335 which is less than the standard value i.e. 2, means that the t-value is less than 2. The p-value of the DI is .746 which is more than 0.05 means that the DI has negative and insignificant effects on GDP.

The beta of TB is -.030 which showed per unit change in the GDP due to TB. The change will be negative in response to the TB. The t-value of TB is .574 which is less than the standard value i.e. 2, means that the t-value is less than 2. The p-value of the TB is .582 which is more than 0.05 means that the TB has negative and

insignificant effects on GDP. The beta of INF is .084 which showed per unit change in the GDP due to INF. The change will be positive in response to the INF. The t-value of INF is 1.953 which is less than the standard value i.e. 2, means that the t-value is less than 2. The p-value of the INF is .087 which is more than 0.05 means that the INF has positive and insignificant effects on GDP. The beta of EXR is .567 which showed per unit change in the GDP due to EXR. The change will be positive in response to the EXR. The t-value of EXR is 1.217 which is less than the standard value i.e. 2, means that the t-value is less than 2. The p-value of the EXR is .258 which is more than 0.05 means that the EXR has positive and insignificant effects on GDP.

Granger Causality Test

The granger causality test results are given in table 4. The results of the test showed that the results of DI-GDP and GDP-DI is significant and showed that DI granger cause GDP and GDP granger cause DI as the f-value is 7.5 and 11.3 respectively with p-value of 0.02 and 0.00. Other like FDI_{PCS}-GDP and GDP-FDI_{PCS} are significant with p-values 0.0124 and 0.0259. EXR-GDP is significant with f-ratio 4.8 and p-value 0.04 and GDP-EXR with f-ratio 5.0 and p-value 0.04. The other mentions are insignificant as their f-ratio and p-value both are insignificant.

Table 4: Granger Causality Test Results

R			
Null Hypothesis:	Obs	F-Statistic	P-value.
DI does not Granger Cause GDP	13	7.53364	0.0207
GDP does not Granger Cause DI		11.3759	0.0710
EXR does not Granger Cause GDP	13	4.80409	0.0432
GDP does not Granger Cause EXR		5.08815	0.0977
FDI_{PCS} does not Granger Cause GDP	13	0.14385	0.0124
GDP does not Granger Cause FDI_{PCS}		0.52357	0.0259
INF does not Granger Cause GDP	13	0.06467	0.8044
GDP does not Granger Cause INF		2.60039	0.1379
TB does not Granger Cause GDP	13	0.24430	0.0318
GDP does not Granger Cause TB		0.73827	0.4103
EXR does not Granger Cause DI	13	0.28035	0.6080
DI does not Granger Cause EXR		5.31978	0.0438
FDI_{PCS} does not Granger Cause DI	13	0.00990	0.9227
DI does not Granger Cause FDI_{PCS}		1.63999	0.2292
INF does not Granger Cause DI	13	1.47231	0.2529
DI does not Granger Cause INF		0.68640	0.4267
TB does not Granger Cause DI	13	1.02620	0.3349
DI does not Granger Cause TB		0.40988	0.5364
FDI_{PCS} does not Granger Cause EXR	13	5.23292	0.0452
EXR does not Granger Cause FDI_{PCS}		2.23979	0.1654
INF does not Granger Cause EXR	13	0.49601	0.4973

EXR does not Granger Cause INF		0.02147	0.8864
TB does not Granger Cause EXR	13	0.23008	0.6418
EXR does not Granger Cause TB		0.23396	0.6390
INF does not Granger Cause FDI_{PCS}	13	3.74186	0.0818
FDI_{PCS} does not Granger Cause INF		4.52181	0.0594
TB does not Granger Cause FDI_{PCS}	13	0.07405	0.7911
FDI_{PCS} does not Granger Cause TB		6.3E-05	0.9938
TB does not Granger Cause INF	13	0.02594	0.8753
INF does not Granger Cause TB		0.45312	0.5161

Vector Auto-regression

Table 5 shows the results for VAR, we have computed VAR results for the different models. First we have checked the individual significance of the variables and then the joint significance by Wald test. The Cholesky decomposition test is used for the computation of impulse response functions.

Table 5: VAR Test Results for Individual Significance of the Model Variables

	GDP	DI	EXR	INF	TB	FDI_{PCS}
GDP(-1)	1.341991	-14.75326	11.55753	22.67308	-1133.826	20.72975
	(0.11712)	(5.70049)	(17.4460)	(12.0105)	(1348.70)	(5.68532)
	[11.4580]	[-2.58807]	[0.66248]	[1.88777]	[-0.84068]	[3.64619]
DI(-1)	0.011053	0.157457	-1.267456	-0.087143	9.346252	0.226814
	(0.00871)	(0.42387)	(1.29723)	(0.89307)	(100.286)	(0.42275)
	[1.26921]	[0.37147]	[-0.97704]	[-0.09758]	[0.09320]	[0.53653]
EXR(-1)	-0.003451	0.077967	0.704944	-0.172202	21.80668	-0.282959
	(0.00255)	(0.12389)	(0.37916)	(0.26103)	(29.3122)	(0.12356)
	[-1.35573]	[0.62931]	[1.85921]	[-0.65970]	[0.74395]	[-2.29000]
INF(-1)	0.000796	-0.065642	-0.345392	-0.004188	-5.668063	-0.320688
	(0.00283)	(0.13770)	(0.42142)	(0.29012)	(32.5789)	(0.13733)
	[0.28140]	[-0.47671]	[-0.81959]	[-0.01443]	[-0.17398]	[-2.33511]
TB(-1)	3.03E-05	0.001065	-0.003785	-0.000886	-0.337880	0.000239
	(3.3E-05)	(0.00162)	(0.00497)	(0.00342)	(0.38427)	(0.00162)
	[0.90780]	[0.65599]	[-0.76149]	[-0.25902]	[-0.87929]	[0.14729]
FDI_{PCS} (-1)	-0.005755	0.194855	0.941867	0.991964	34.43236	-0.021907
	(0.00536)	(0.26091)	(0.79851)	(0.54972)	(61.7305)	(0.26022)
	[-1.07359]	[0.74682]	[1.17954]	[1.80448]	[0.55779]	[-0.08419]
C	-4.273143	196.3076	-106.2572	-271.6562	13089.99	-247.7032
	(1.49358)	(72.6941)	(222.475)	(153.161)	(17199.0)	(72.5007)
	[-2.86100]	[2.70046]	[-0.47761]	[-1.77367]	[0.76109]	[-3.41656]
R-squared	0.674387	0.807788	0.964704	0.936179	0.841311	0.213050
Adj. R-squared	0.638774	0.615576	0.929408	0.872358	0.682621	-0.573900
Sum sq. resids	0.004427	10.43089	98.22029	10.48662	46.55142	587007.5
S.E. equation	0.027163	1.318515	4.045992	1.322032	2.785421	312.7852
F-statistic	177.1595	4.202595	27.33195	14.66879	5.301617	0.270729

Individual Significance

First we have checked the individual significance of all the independent variables in each model. It is known that if the P-value is less than 5 percent, the independent variable will be significant,

otherwise insignificant. The VAR results are given in the above table. In the table GDP, FDI_{PCS}, EXR, DI, INF, TB are considered both as endogenous and exogenous variables. So there are six (06) models in the table. In the 1st model for GDP shows that, GDP, FDI_{PCS}, DI and TB independent variables are significant, while the EXR, INF and intercept turned insignificant. In 2nd model of FDI_{PCS} interprets that, GDP, FDI_{PCS} & EXR independent variables have significant impact on FDI_{PCS}, while the DI, INF, TB, and intercept turned insignificant. Similarly in 3rdmodel for EXR, indicates that GDP, EXR TB, and INF independent variables are significant, while the DI, FDI_{PCS} and intercept turned insignificant, and 4th model of DI, the independent variables GDP, DI, TB are significant, while the FDI_{PCS}, INF, EXR and intercept turned insignificant. Moreover in 5th model of INF, GDP, FDI_{PCS}, EXR and INF has significant impact on INF, while the DI, TB and intercept turned insignificant. And in 6th model of TB, GDP, FDI_{PCS}, EXR and TB independent variables have significant impact on TB, while the DI, INF and intercept turned insignificant.

Wald Test for Joint Significance of the Model Variables'
For checking the joint significance, Wald test has been applied. The model will show a significant impact on dependent variable if the P-value is less than 5 percent otherwise will be insignificant.

Table 6: Wald Test Results for Gross Domestic Product Model
Equation: GDP = C(1)*GDP(-1) + C(2)*FDI_{PCS}(-1) + C(3)*EXR(-1) + C(4) *DI(-1) + C(5)*INF(-1) + C(6)*TB(-1) + C(7)

Test Statistics	Value	df	Probability
Chi-square	2965999	7	0.0000
Null Hypothesis: C(1)=C(2)=C(3)=C(4)=C(5)=C(6)=C(7)=0			
Null Hypothesis Summary:			
Normalized Restriction (=0)		Value	Std. Err.
C(1)		1.341991	0.117123
C(2)		-0.005755	0.005361
C(3)		-0.003451	0.02546
C(4)		0.011053	0.008709
C(5)		0.000796	2.83E-03
C(6)		3.03E-05	3.34E-05
C(7)		-4.273141	1.493584

**Restrictions are linear in coefficients*

The above table shows the results of Wald test. The null hypothesis is that "Co-efficient" of all the variables are equal to zero, i-e there is no joint influence of GDP, $FDI_{PCS,}$ EXR, DI, INF, TB on GDP.

However, as the p-value is less than 5 percent, hence we reject the null hypothesis and concluded that all the variables are jointly significant.

Table 7: Wald Test Results for FDIin Postal and Courier Services Model Equation: FDI_{PCS} = C(8)*GDP(-1) + C(9)*FDI_{PCS}(-1) + C(10)*EXR(-1) + C(11)*DI(-1) + C(12)*INF(-1) + C(13)*TB(-1) + C(14)

Test Statistics	Value	df	Probability
Chi-square	32.24027	7	0.0000
Null Hypothesis: C(8)=C(9)=C(10)=C(11)=C(12)=C(13)=C(14)=0			
Null Hypothesis Summary:			
Normalized Restriction (=0)		Value	Std. Err.
C(8)		20.72975	5.68532
C(9)		-0.021906	0.260219
C(10)		-0.282959	0.123563
C(11)		0.226814	0.422745
C(12)		-0.320689	0.137333
C(13)		0.000239	0.00162
C(14)		-247.7032	72.50069

**Restrictions are linear in coefficients*

The above table shows the results of Wald test. The null hypothesis is that "Co-efficient" of all the variables are equal to zero, i.e. there is no joint influence of GDP, $FDI_{PCS,}$ EXR, DI, INF, TB on FDI_{PCS}. However, as the p-value is less than 5 percent, hence we reject the null hypothesis and concluded that all the variables are jointly significant.

Table 8: Wald Test Results for Exchange Rate Model Equation: EXR = C(15)*GDP(-1) + C(16)*FDI_{PCS}(-1) + C(17)*EXR(-1) + C(18)*DI(-1) + C(19)*INF(-1) + C(20)*TB(-1) + C(21)

Test Statistics	Value	df	Probability
Chi-square	4274.008	7	0.0000
Null Hypothesis: C(15)=C(16)=C(17)=C(18)=C(19)=C(20)=C(21)=0			
Null Hypothesis Summary:			
Normalized Restriction (=0)		Value	Std. Err.
C(15)		11.55753	17.44596
C(16)		0.941867	0.798507
C(17)		0.704944	0.3798507
C(18)		-1.267456	1.297235
C(19)		-0.345392	0.421421
C(20)		-0.003785	0.004971
C(21)		-106.2572	222.4754

**Restrictions are linear in coefficients*

The above table shows the results of Wald test. The null hypothesis is that "Co-efficient" of all the variables are equal to zero, i-e there is no joint influence of GDP, $FDI_{PCS,}$ EXR, DI, INF, TB on EXR. However, as the p-value is less than 5 percent, hence we reject the null hypothesis and concluded that all the variables are jointly significant.

Table 9: Wald Test Results for Domestic Investment Model Equation: DI = C(22)*GDP(-1) + C(23)*FDI_{PCS}(-1) + C(24)*EXR(-1) + C(25) *DI(-1) + C(26)*INF(-1) + C(27)*TB(-1) + C(28)

Test Statistics	Value	df	Probability
Chi-square	1329.324	7	0.0000
Null Hypothesis: C(22)=C(23)=C(24)=C(25)=C(26)=C(27)=C(28)=0			
Null Hypothesis Summary:			
Normalized Restriction (=0)		Value	Std. Err.
C(22)		-14.75326	5.700485
C(23)		0.194855	0.260913
C(24)		0.077967	0.123892
C(25)		0.157457	0.423873
C(26)		-0.065642	0.137700
C(27)		0.001065	0.001624
C(28)		196.3076	72.69409

**Restrictions are linear in coefficients*

The above table shows the results of Wald test. The null hypothesis is that "Co-efficient" of all the variables are equal to zero, i-e there is no joint influence of GDP, $FDI_{PCS,}$ EXR, DI, INF, TB on DI. However, as the p-value is less than 5 percent, hence we reject the null hypothesis and concluded that all the variables are jointly significant.

Table 10: Wald Test Results for Inflation Model Equation: INF = C(29)*GDP(-1) + C(30)*FDI_{PCS}(-1) + C(31)*EXR(-1) + C(32)*DI(-1) + C(33)*INF(-1) + C(34)*TB(-1) + C(35)

Test Statistics	Value	df	Probability
Chi-square	170.3289	7	0.0000
Null Hypothesis: C(29)=C(30)=C(31)=C(32)=C(33)=C(34)=C(35)=0			
Null Hypothesis Summary:			
Normalized Restriction (=0)		Value	Std. Err.
C(29)		22.67308	12.01049
C(30)		0.991965	0.549724
C(31)		-0.172202	0.261031

C(32)	-0.087143	0.893068
C(33)	-0.004188	0.290123
C(34)	-0.000886	0.003422
C(35)	-271.6562	153.1609

**Restrictions are linear in coefficients*

The above table shows the results of Wald test. The null hypothesis is that "Co-efficient" of all the variables are equal to zero, i.e. there is no joint influence of GDP, $FDI_{PCS,}$ EXR, DI, INF, TB on INF. However, as the p-value is less than 5 percent, hence we reject the null hypothesis and concluded that all the variables are jointly significant.

Table 11: Wald Test Results for Trade Balance Model Equation: TB = C(36)*GDP(-1) + C(37)*FDI_{PCS}(-1) + C(38)*EXR(-1) + C(39)*DI(-1) + C(40)*INF(-1) + C(41)*TB(-1) + C(42)

Test Statistics	Value	df	Probability
Chi-square	1.842738	7	0.968
Null Hypothesis: C(36)=C(37)=C(38)=C(39)=C(40)=C(41)=C(42)=0			
Null Hypothesis Summary:			
Normalized Restriction (=0)		Value	Std. Err.
C(36)		-1133.826	1348.702
C(37)		34.43236	61.73052
C(38)		21.80668	29.31219
C(39)		9.346248	100.2859
C(40)		-5.668064	32.57895
C(41)		-0.33788	0.384266
C(42)		13089.99	17199.00

**Restrictions are linear in coefficients*

The above table shows the results of Wald test. The null hypothesis is that "Co-efficient" of all the variables are equal to zero, i-e there is no joint influence of GDP, $FDI_{PCS,}$ EXR, DI, INF, TB on TB. However, as the p-value is greater than 5 percent, hence we accept the null hypothesis and concluded that all the variables are jointly insignificant.

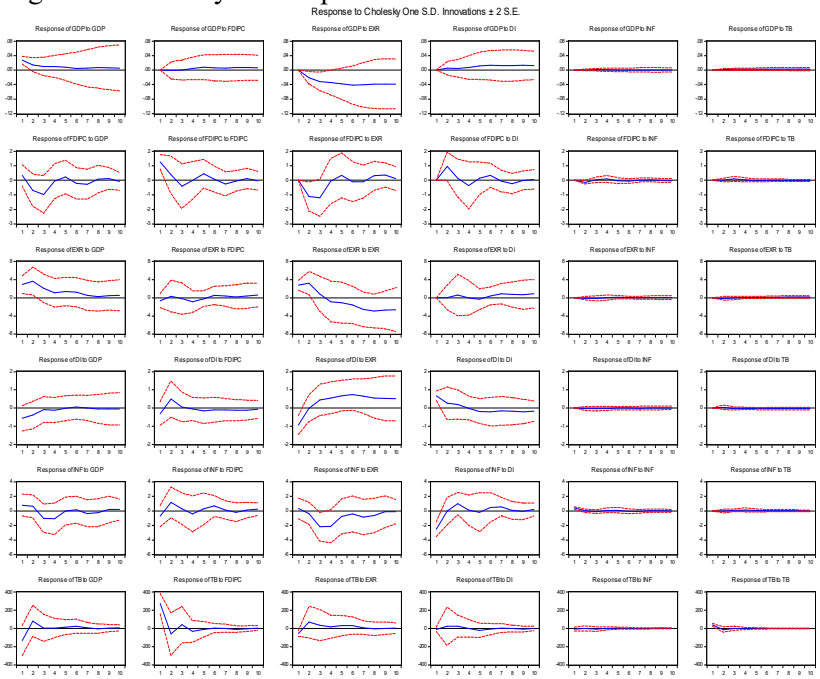
Impulse Response

Cholesky decomposition is used to check the response of the dependent variables to shock due from the independent variables. The results are given in figure 4.17. The results show that GDP is affected by the shocks from all of the lags GDP, FDI_{PCS}, EXR, DI, TB and INF. The results for FDI_{PCS} also shows the impact of shock

from the lag GDP, FDI_{PCS}, EXR, and INF, while the shocks from the lags DI, and TB showed no response. EXR model shows the impact of shock from the lag GDP, FDI_{PCS}, EXR, DI and INF, while shocks from lag TB has no impact on EXR. The DI model shows a positive shock from the lag GDP, EXR, and $FDI_{PCS,}$ while shock from lag DI, TB and INF has showed no response.

The model for INF shows the positive response to the shock due from lag INF and TB, while there is no response from the shock of lag GDP, FDI_{PCS}, EXR and DI.At last the model for TB have also a positive impact due to the shock in GDP, FDI_{PCS}, and TB, and has no response due to the shock from DI, INF, and TB.

Figure 2: Cholesky Decomposition Test Results



Conclusion

Previous studies were limited to analyze the relationship between foreign direct investment and economic growth of Pakistan. The present study is making addition to the literature by analyzing the relationship foreign direct investment inflows in the Postal and Courier Services and economic growth of Pakistan. The time period of the study is from 2005 to 2015. Ordinary least squares, Granger Causality test and Vector Auto regression has been

applied for estimating the study results. The main findings of the study show that foreign direct investment inflows in the postal and courier services put a positive and significant and positive impact on the economic growth of Pakistan. The Granger Causality test shows a one directional relationship between the foreign direct investment inflows in postal and courier and economic growth. The VAR test results also supported the overall results. These findings show that foreign direct investment in postal and courier services is also an important indicator of the economic growth of Pakistan.

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