

# FOREIGN DIRECT INVESTMENT AND EMPLOYMENT NEXUS: EVIDENCE FROM PAKISTAN

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**ABSTRACT:** *Being a developing country, Pakistan is experiencing a severe problem of increased unemployment and shortage of capital. Because of this, Pakistan has to depend on capital inflows from abroad to increase the level of employment. Along with Pakistan's current proactive policy and increasing economic globalization, the scale of attracting foreign investment has grown over the past few years. Foreign Direct Investment (FDI) is considered as the best supplement for domestic resources and can play a crucial role in promoting employment. This study evaluates the significance of FDI for increasing employment level in Pakistan and uncovers whether FDI alone is the best supplement to comparable domestic resources. Johansen Co-integration technique and Vector Error Correction Model (VECM) have been used on time series data ranging from 1980-2014 to assess the relationship in the short and long term between the three variables: FDI, Gross Domestic Product (GDP) and Employment Level. The results suggest that a strong negative long-run relation exists between employment and FDI, whereas GDP positively and significantly affects the employment level. Therefore, to maximize the benefits from increased FDI, there is a need to complement the policies for enhancing FDI inflow with those that increase the employment level.*

**Keywords:** FDI, GDP, Employment, Unemployment

## 1. INTRODUCTION

Foreign Direct Investment (FDI) is one of the key indicators of the economic health of a country and plays a decisive role in its economic development. The role of FDI in boosting economic growth has increased over the past years due to globalization. According to UNCTAD<sup>1</sup> conference (2013), in less developed countries, the inflows of FDI in 2012 have increased by 6.5 times as compared to the FDI inflows in 1990 [27]. The share of global FDI inflows towards developing countries increased from 17% to 52% from 1990 to 2012 [25-26]. This increased share of FDI in developing countries demonstrates the success of the policies that aim at attracting FDI to developing countries. It is considered the driving force for the economic growth of a country because it brings with it capital, technical and managerial knowledge, job opportunities and opportunities for opening up of new markets. Therefore, governments of developing countries always give significant importance to FDI while formulating their economic policies.

Since FDI significantly contributes towards the employment level of a country, and developing economies such as Pakistan face the constant challenge of job creation, there is a need to analyze the relationship between the two and decipher how FDI should diffuse in Pakistan. Considering Pakistan, unemployment has increased in the last decade. In the year 2006, 3.3 million<sup>2</sup> people in Pakistan were unemployed and this figure increased to 3.58 million in 2014.<sup>3</sup> Tackling unemployment is very important because it is the root cause of many other social problems including crime [18-24] It also wastes the resources of the economy and disturbs the life of people, both socially and emotionally. These problems become even worse in developing countries like Pakistan due to the improper functioning of social

welfare schemes and institutions. This research paper, therefore, evaluates the employment generating role of FDI in Pakistan.

Investment plays a crucial role in generating increased opportunities for employment in the economy and promoting sustainable economic growth for the country [21-23]. There are two ways in which an open economy can increase its level of investment: by increasing domestic savings or by attracting FDI. Similar to other developing countries, the saving-investment gap in Pakistan is large. In 2014-15, savings accounted for 14.5% of Gross Domestic Product (GDP), while investments accounted for 15.1% of GDP<sup>4</sup>. This saving-investment gap calls upon the need to rely on foreign investment in addition to domestic investment. FDI has become an important source of inflow of private foreign capital for developing countries including Pakistan over the last three decades. Pakistan has attracted a significant amount of FDI up to 2007. Total amount of FDI was just USD 0.534 billion in 2003 which increased to USD 5.59 billion in 2007. However, this rise in FDI faced a decline in 2008 in the wake of global financial crises in all developing countries. FDI inflows to Pakistan declined to USD 2.338 billion in 2009 as compared to 5.59 billion in 2007-a decrease of 58.17%<sup>5</sup>.

[23-28] discussed the role that FDI plays in increasing economic growth and creating employment opportunities in the recipient country via technological spillovers. However, there are also many studies which show that FDI has no effect (or adverse effect) on the employment level of a country [12-19] Based on theoretical considerations, it can be safely concluded that FDI directly affects the employment level in the recipient country. It helps to improve the status of domestic employment by creating new jobs and skill transfers

<sup>1</sup> United Nations Conference of Trade and Development

<sup>2</sup> Pakistan Economic Survey 2007-08, page no. 95

<sup>3</sup> Pakistan Economic Survey 2014-15, page no. 150.

<sup>4</sup> Pakistan Economic Survey 2014-15, page no. 18

<sup>5</sup>

<http://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD?p age=1>

[16] . It brings new and improved jobs in areas with high unemployment, but at times acquisition of the firms may also result in job losses. For example, when corporations merge, there are usually instances of redundancy. In such cases, it becomes essential to lay off the employees performing similar tasks.

FDI not only affects the employment levels of a country directly but also has indirect effects. These indirect effects operate through the movement of skilled labor from investing countries to the recipient countries [7- 9] Moreover, the relationship between suppliers and service providers also contribute in enhancing employment. Jobs are created through multiplier effects in the local economy. Consumption, savings, and investments all increase in response to an increase in the income levels, which in turn create increased employment opportunities. However, increased dependence on imports and displacement of existing firms may become a reason for job losses.

FDI also brings modern technology in the host country, but the way in which this advanced technology impacts employment in the economy depends on the nature, skills, and productivity of the labor force. Along with the positive impacts that FDI has on the skills, productivity, technology, trade and economic growth, it may also affect the wages and the level of employment in the host economy adversely.

According to [2] FDI affects job creation through the following four ways:

1. Employment generation with the help new production plants and new job opportunities that FDI brings with it.
2. Employment crowding-out: FDI results in intense competition between newly attracted foreign and domestic firms. In response to this, domestic firms often lay off workers to increase their competitiveness.
3. Employment creations due to the establishment of linkages between different sectors of the economy.
4. Employment loss for the workers who are inefficient and unsuitable for the new corporate environment. Technological advancement i.e. introduction of labor-saving machines or more efficient processes may lead to the loss of jobs. Moreover, dependence on imported goods and reduction in the demand for locally produced goods also results in job loss.

Brincikova and Darmo [2] discussed that the net effect of FDI on the recipient country depends on the nature of investment and the mode through which investors enter the markets. In Greenfield Investment plans, the investors set up new production plants and factories and/or focus on the expansion of existing production activities, thereby increasing labor demand. However, mergers and acquisitions always aim at restructuring the organizations to make them more efficient and profitable. Therefore, employees may or may not be laid off.

Pakistan, like all other countries, tries to increase both the value and share of FDI inflows. Because employment generation has been the priority of policymakers all over the world, the question regarding the effect of FDI on the level of employment in the recipient countries is of immense importance. The present study examines the employment

generating role of FDI in Pakistan between the years 1980 and 2014.

The remaining paper has been divided into the following sections: Section 2 discusses the past empirical work on the topic; discussion regarding data and model are in section 3; section 4 describes the methodology being followed in the analysis; section 5 reports the findings and discusses the results, and Section 6 concludes the paper with some policy recommendations.

## 2. LITERATURE REVIEW

The past literature has comprehensively discussed the impact of FDI on an economy's growth, development, and labor market. Different aspects of FDI and their impact on the recipient countries are well elaborated. Most of the research has discussed the impact of FDI on economic growth, trade, wages, employment level and technological spillovers [5-6]. However, the studies do not find any conclusive evidence regarding the impact of FDI on the labor market. Review of available literature has been conducted to understand this relationship.

There are many studies which conclude that FDI positively affects the employment level of an economy. Many of these studies also highlight the role that FDI plays in promoting economic growth. [23] undertook an empirical study to examine the micro and macro level impact of FDI on the economy of China from 1978-96. The author pointed out that market-oriented reforms and trade liberalizing policies that China adopted in 1978 resulted in increasing the growth of the economy and changing the economic structure of China. It was further discussed that policies like openness and increased arrival of FDI has impacted Chinese economy at both micro and macro level. At the micro level, FDI affected technical and management efficiency the firms because FDI introduces advanced technology and trains the labor. At the macro level, FDI affected economic growth, investment and trade along with financial variables. The results suggested that FDI has contributed significantly towards promoting the economic growth of the Chinese economy in the past eighteen years by enhancing trade volume, capital formation and providing more job opportunities.

Likewise, using time series data from 1980 to 2010, Shaari et al., [21] examined the impact that FDI has on growth and unemployment of Malaysia. The results revealed that FDI increased both employment level and economic growth of the country. Similarly, [8] also analyzed the long-run relation between employment level and FDI in Pakistan from 1970 to 2011. The study used exchange rate and GDP per capital besides FDI and employment level. The results suggested that FDI positively and significantly affects employment level in the long-run. The reason for this positive relationship was the availability of greater employment opportunities due to the inflow of foreign capital. Furthermore, positive and significant relation was also found between employment and GDP.

Vacaflares [28] examined the role that FDI played in generating employment opportunities in twelve Latin American countries from 1980 to 2006. The results indicated that FDI has contributed positively and significantly towards employment generation in the host countries. Findings

suggested that opening up to international trade is beneficial in terms of employment generation. Separately considering the effect of FDI for male and female labor force, the author found that FDI has only impacted male labor force in a positive manner. Male labor force was found to experience almost 20% larger gains in employment level as compared to the whole labor force.

Nunnenkamp et al., [17] discussed the role of FDI in employment generation and in helping the Mexican economy to overcome its problem related to the labor market. The analysis was based on almost two hundred industries belonging to the Mexican manufacturing sector. Panel data set from 1994 to 2006 was selected and GMM technique was used for estimation. The analysis was conducted for both white and blue collar employees. The results suggested that FDI positively but modestly affects employment in manufacturing industries of Mexico. Furthermore, no evidence was found on the fact that FDI is more favorable towards increasing white collar employment.

Moreover, Mickiewicz et al., [16] conducted an empirical study to analyze the effect of FDI on generating employment opportunities, preserving employment and changing the employment structure in four countries namely Hungary, Czech Republic, Estonia, and Slovakia. The results of the study showed that FDI has been the most successful in generating employment opportunities and preserving employment in Hungary because of its employment structure being similar to that of developed countries. In all four economies, foreign investment has promoted employment either by generating new employment opportunities or by preserving the existing employment. FDI works as a complement rather than a substitute for creating new jobs and preserving the existing ones. Based on the results of the study, the authors suggested that if FDI enhancement policies are unable to increase the amount of FDI inflow then the aim of such policies should be to attract diverse types of FDI.

Mehra [15] examined the impact of FDI on GDP and the level of employment for India from 1970-2007. The impact of FDI on GDP, total employment, employment in the public and private sectors were separately analyzed by estimating four separate equations. The results revealed that though FDI had a positive impact on GDP, total employment level and employment in public and private sectors, its effect was the maximum on GDP. From 1970 to 2007, GDP of India increased by 28% for every 1% increase in FDI. The effect of FDI was found to be positive on overall employment. Total employment increased by 4% for every 1% increase in FDI. FDI had the minimum impact on the employment in the private and public sector. The reason for this was that majority of the country's population was associated with the agriculture sector. The study concluded that although the growth rate of Indian economy was increasing but there was no improvement in its level of employment.

The above-mentioned studies show the importance of FDI towards stimulating economic growth and increasing employment level of the economy. In contrary, there are many studies which question this proposition and provide evidence in support the view that FDI negatively impacts the

level of employment in an economy. Jenkins [12] conducted a quantitative and qualitative study to test the significance of FDI for employment generation in Vietnam. Vietnam received a large amount of capital inflow in the 1990s - a period known for rapid globalization. The share of foreign firms in the industrial sector is large but this large share was not able to produce a significant impact on employment in Vietnam. High labor productivity and less value addition to the output of this investment were the factors responsible for this less substantial effect. Furthermore, the majority of Vietnam's labor force earned their livelihood from the agriculture and service sectors where the amount of FDI was at a minimum level. The study concluded with the point that FDI has a minimum or even negative indirect impact on the employment level because of the crowding out effects that replace domestic competitors with foreign investors.

Rizvi and Nishat [19] conducted an empirical study related to three big countries of Asia (China, India, and Pakistan) and assessed the employment generating effect of FDI in these three countries for the period 1985-2008. Pedroni's test of panel co-integration was applied to check the long-run relationships and Seemingly Unrelated Regression (SUR) technique was applied to estimate the effect that FDI has on the level of employment. The results of SUR suggested that FDI has no role in employment generation while positive and significant effect of GDP was observed for employment in three Asian countries. The study also applied impulse response technique and results showed that growth elasticity of employment was very low in the countries under consideration. The authors were of the view that FDI should not be considered as a tool for employment generation in the countries under consideration. Therefore, apart from narrowing the focus on attracting FDI, the focus of policies should be broadened to increasing employment growth as well.

Similarly, Brincikova and Darmo [2] also examined the impact of FDI on the level of employment in V4 (Hungary, Poland, Slovakia and the Czech Republic) countries. Using panel data ranging from 1993-2012, the study concluded that FDI did not play a significant role for employment generation in considered countries.

It is evident from the past literature that we cannot make any sound conclusion regarding that employment generating role of FDI. Theoretically, if one says that FDI promotes economic growth then it should contribute towards generating employment opportunities as well. But evidence exist that put questions on this simple reasoning. The aim of this research paper is to clarify the relation between FDI and employment level in case of Pakistan.

### **3. DATA DESCRIPTION AND MODEL SPECIFICATION**

The comprehensive literature discussed in the previous section shows the imperative and vital role of FDI in job creation and enhancement of the employment level in a country. Since mid-nineties, FDI inflow to Pakistan has shown marked increase, and because Pakistan is experiencing difficulties in creating employment opportunities, there is a need to analyze the role that foreign inflow can play in

employment generation. Time series data from 1980-2014 has been taken by the present study to assess the short-run and the long-run relationship between the variables of interest. The dependent variable is domestic employment level and the independent variables are FDI and GDP of the Pakistan economy. All variables are measured in millions.

For estimation, the following equation is used:

$$E = B_0 + B_1FDI + B_2GDP + u_t$$

Where,

$E$  = Employment Level

$FDI$  =Foreign Direct Investment

$GDP$  =Gross Domestic Product and

$u_t$ = Error Term

Employment level ( $E$ ) is defined as the part of the labor force which is employed. For the present study,  $E$  is measured in millions. Data for the employed labor force has been taken from International Labor Organization (ILO) and it has been used as a proxy for employment level, as was used by [29-8]. FDI can be defined as total amount of foreign inflow to a country and GDP is defined as the approximate value of all the goods and services that an economy produces over a given period of time. The data for both FDI and GDP has been taken from WDI [30].

**4. METHODOLOGY**

**4.1. Unit Root Tests:**

To test the above-mentioned relationship, the present study has used annual time series data. Such data sets are usually non-stationary and conducive to spurious regression, therefore, checking the stationarity of the variables is a prerequisite for applying any statistical method of estimation. For this purpose, the present study has used Augmented Dickey-Fuller (ADF) test of stationarity.

**4.2. Co-integration Test:**

The presence of stable long-run relation among three variables has been checked by applying Johansen’s and Juselius [13] co-integration test Before applying this approach, an optimal lag length is selected to guarantee that the error term is normally distributed and does not have problems of heteroskedasticity and autocorrelation [14]. Johansen’s methodology is based on Vector Autoregressive (VAR) model of order  $m$  given by:

$$Y_t = \alpha + A_1 Y_{t-1} \dots \dots \dots + A_m Y_{t-m} + \epsilon_t$$

Or alternatively,

$$Y_t = \alpha + \sum_{k=1}^m \Pi_k Y_{t-k} + \epsilon_t$$

where,  $Y_t$  is a vector of the variables used in the study. Since the present study has used three variables namely FDI, GDP, and  $E$ ,  $Y_t$  is the vector of these three variables. Here it is important that these three variables are stationary at level one. The vector of intercepts is represented by  $\alpha$ ,  $\Pi_i$  is a time-invariant  $3 \times 3$  matrix and  $\epsilon_t$  is a white noise vector of residuals.

In the first difference form, the above VAR model can be rewritten as:

$$\Delta Y_t = \alpha + \sum_{k=1}^{m-1} \Gamma_k \Delta Y_{t-k} + \Pi Y_{t-1} + \epsilon_t$$

where

$$\Pi = \sum_{i=1}^m A_i - I \text{ and } \Gamma_i = - \sum_{j=i+1}^m A_j$$

and  $Y_t$  and  $\epsilon_t$  are already defined above and  $k$  is a lag length.  $\Pi$  is a  $3 \times 3$  impact matrix because the present study uses three variables.  $\Pi$  gives information on the long-run relation among the variables and its rank represents the number of co-integrating relationships. In this regard, Maximum Eigenvalue and Trace tests have been used to check the number of co-integrating vectors (Johansen, 1995).

**4.3. Trace Statistics:**

$$\lambda \text{ trace } (r) = -n \sum_{l=r+1}^j \ln(1 - \lambda_l)$$

where,

$n$ = total observations;

$r$ = co-integrating vectors;

$j$ = total variables; and

$\lambda$ 's = Eigenvalues.

Trace test has composite hypothesis which is:

$$H_0: \text{Number of cointegrating relationships} \leq r$$

$$H_1: \text{Number of cointegrating relationships} > r$$

**4.4. Maximal Eigen Value Test Statistics:**

$$\lambda_{\max}(r, r + 1) = -n \ln(1 - \lambda_{r+1})$$

where  $n$ ,  $r$ , and  $\lambda$  are already defined above.

For the maximum eigenvalue test statistic, the null and alternative hypotheses are:

$$H_0: \text{Number of cointegrating relationships} = r$$

$$H_1: \text{Number of cointegrating relationships} = r + 1$$

The critical values for both these tests are provided by Johansen and Juselius (1990).

**4.5. Vector Error Correction Model (VECM):**

If there is co-movement among the variables of interest and a possibility that these variables will trend together to form stable long-run, we may estimate the VECM. VECM is used to analyze the dynamics of the equilibrium both in the short and the long-run. VECM for the present study is as follows:

$$\begin{aligned} \Delta E_{1t} &= \alpha_{10} + \sum_{i=1}^p \alpha_{11,i} \Delta E_{1,t-i} + \sum_{i=1}^p \alpha_{12,i} \Delta FDI_{2,t-i} \\ &+ \sum_{i=1}^p \alpha_{13,i} \Delta GNP_{3,t-i} + \lambda_1 ECT_{t-1} \\ &+ u_{1t} \dots \dots \dots (1) \end{aligned}$$

$$\begin{aligned} \Delta FDI_{2t} &= \alpha_{20} + \sum_{i=1}^p \alpha_{21,i} \Delta E_{1,t-i} + \sum_{i=1}^p \alpha_{22,i} \Delta FDI_{2,t-i} \\ &+ \sum_{i=1}^p \alpha_{23,i} \Delta GNP_{3,t-i} + \lambda_2 ECT_{t-1} \\ &+ u_{2t} \dots \dots \dots (2) \end{aligned}$$

$$\Delta GNP_{3t} = \alpha_{30} + \sum_{i=1}^p \alpha_{31,i} \Delta E_{1,t-i} + \sum_{i=1}^p \alpha_{32,i} \Delta FDI_{2,t-i} + \sum_{i=1}^p \alpha_{33,i} \Delta GNP_{3,t-i} + \lambda_3 ECT_{t-1} + \mathbf{v}_{3t} \dots \dots \dots (3)$$

Where

- $\Delta$  = first difference operator
- $p$  = lag length
- $ECT_{t-1}$  = lagged Error Correction Term

The coefficient of  $ECT_{t-1}$  is a short-run correction coefficient and shows the amount by which the long-run disequilibrium in the regressand is adjusted in every period. Stability of long-run equilibrium is shown by the negative and statistically significant coefficient of  $ECT_{t-1}$ .

**4.6. Diagnostic Tests:**

The standard VECM based diagnostic tests have been applied to determine the validity of the estimated model. Vector Error Correction (VEC) residual-based Lagrangian Multiplier (LM) test for serial correlation, VEC residual based White Test for heteroskedasticity and VEC residual based normality test are carried out in this regard.

**4.7. Stability Test:**

Stability of the model has been checked by applying CUSUM (Cumulative Sum) and CUSUMSQ (CUSUM of Squares) of recursive residuals [1-3-4].

**5. EMPIRICAL RESULTS AND DISCUSSION**

**5.1. Determination of the Stationarity of Data:**

The results of the ADF test- applied to check the stationarity of the variables are given in table 1 and 2:

**Table 1: Results of ADF test at level**

Variables	ADF test results at level	
	Intercept	Intercept and Trend
E	2.742872	-0.201460
FDI	1.495129	-0.661750
GDP	4.1637160	1.357029
<b>Critical values</b>		
1%	-3.661661	-4.284580
5%	-2.960411	-3.562882
10%	-2.619160	-3.215267

\*, \*\* and \*\*\* represent the significance of the variable at 1%, 5%, and 10% respectively.

**Table 2: Results of ADF test at first difference**

Variables	ADF test results at first difference	
	Intercept	Intercept and Trend
E	-4.773301*	-6.306374*
FDI	-4.924130*	-5.628615*
GDP	-2.150540	-3.642860**
<b>Critical values</b>		
1%	-3.670170	-4.296729
5%	-2.963972	-3.568379
10%	-2.621007	-3.218382

\*, \*\* and \*\*\* represent the significance of the variable at 1%, 5%, and 10% respectively.

The above results suggest that all of the variables are not stationary at level but they become stationary at first difference i.e. the order of integration of the variables is 1.

**5.2. Selection of Maximum Lag Length:**

To find the optimal lag length, the present study has used Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC). Results of these criteria suggest that the lag length optimal for this model is 2.

**5.3. Co-integration Test Results:**

As all three variables are found to be integrated of order one, there is a possibility that a relationship exists between the variables in the long-run. To check the existence of such relationship, the present study has used Johansen Co-integration test. Table 3 below represents the trace test results.

**Table 3: Results of the Trace test**

Null Hypothesis	Alternative Hypothesis	Trace Statistics	Critical Value At 5% level	Probability <sup>a</sup>
$r \leq 0^*$	$r > 1$	78.84738	35.19275	0.0000*
$r \leq 1^*$	$r > 2$	26.20305	20.26184	0.0067*
$r \leq 2$	$r > 3$	5.457294	9.164546	0.2370

\*represent the rejection of null hypothesis at the 5% level.

<sup>a</sup>MacKinnon-Haug-Michelis (1999) p-values.

Since the results indicate the existence of two co-integrating vectors, it can be concluded that the FDI, GDP and E have a relationship between them in the long-run.

The results of maximum Eigen test are shown in table 4.

**Table 4: Results of Maximum Eigenvalue test**

Null Hypothesis	Alternative Hypothesis	Max-Eigen Statistics	Critical Value At 5% level	Probability <sup>a</sup>
$r = 0^*$	$r = 1$	52.64433	22.29962	0.0000
$r = 1^*$	$r = 2$	20.74576	15.89210	0.0079
$r = 2$	$r = 3$	5.457294	9.164546	0.2370

\* represent rejection of null hypothesis at the 5% level.

<sup>a</sup> MacKinnon-Haug-Michelis (1999) p-values.

The results of maximum Eigenvalue test also highlighted the existence of a long-run relationship among three variables. It shows that we have two co-integrating vectors. Based on the results of both the tests, it can be stated that employment, FDI, and GDP have a relationship between them in the long-run and they all will be moving in the same direction in the long-run.

The focus of this research paper is to examine the response of employment to FDI and GDP; therefore, co-integrating vectors are normalized by employment. Table 5 below provides the results of the estimated long-run relationship.

**Table 5: Normalized Equation of Co-integration**

Dependent Variable = E			
Variables	Coefficient	S.E	t-values
Constant	-12553.13	2213.03	-5.672375
FDI	-14.53316	1.57621	-9.22032
GDP	0.356232	0.05970	5.967035

These results can be represented in the form of an equation as follows:

$$E_t = -12553.13 - 14.53316FDI_t + 0.356232GDP_t$$

**t-values (-5.672375) (-9.22032) (5.967035)**

The results indicate that FDI and GDP are significantly related to employment level in Pakistan. Estimates suggest that FDI has negative and significant long-run relation with employment level. These results are in line with the study of [12]. The negative and significant relation between FDI and employment level suggests that FDI crowds out the inefficient domestic firms. Due to this, domestic firms decrease their output levels and there is eventually a reduction in the overall employment levels. Moreover, through advanced technology spillovers, FDI enhances the average labor productivity. This rise in labor productivity decreases demand for labor which decreases the employment level. Employment levels also fall because the existing

workers are unskilled and are not able to adapt to the advanced technology. Therefore, in this case, the demand for unskilled workers decreases and there is an overall fall in the employment level.

Moreover results also show that GDP is positively and significantly related to the employment level of Pakistan. These results are in line with the studies of [ 20-22-8]. A growing economy increases revenue generation, creates employment and increases labor productivity which results in higher income levels for the labor force. Economic growth increases productivity and investment prospects which ultimately create job opportunities. The increase in productivity and sustainability of businesses; based on realistic potentials in the markets, results in long-term employment opportunities.

#### 5.4. VECM results:

Since all the variables used in the present study are stationary at level 1 and are co-integrated, VECM with two cointegrating relations can be estimated. Results of the VECM are shown in the following table. Section A of the table shows the results for the short-run and long-run dynamics for the three equations and section B shows the summary statistics.

**Table 6: VECM Results**

Section A			
Variables	Equation 1 D(E)	Equation 2 D(FDI)	Equation 3 D(GDP)
Constant	1953.786* (3.497393)	-1090.975* (-4.307775)	3673.106 (1.113986)
D(E <sub>t-1</sub> )	-0.180655 (-0.956485)	0.372180 (0.085621)	1.506338 (1.351296)
D(E <sub>t-2</sub> )	-0.147275 (-0.725944)	0.317940* (3.457078)	3.688934* (3.080864)
D(FDI <sub>t-1</sub> )	1.102438* (2.117148)	1.050473* (4.450128)	10.26247* (3.339240)
D(FDI <sub>t-2</sub> )	1.807174* (2.683698)	0.847367* (2.775849)	2.905803 (0.731137)
D(GDP <sub>t-1</sub> )	-0.104557 (-1.770130)	0.005074 (0.189479)	-0.506707* (-1.453479)
D(GDP <sub>t-2</sub> )	-0.059167 (-1.162311)	0.058093* (2.517444)	-0.154558 (-0.514439)
ECT <sub>t-1</sub>	-0.287621* (-2.931338)	-0.162557* (-3.654620)	-1.529807* (2.641678)
Section B			
R- Square	0.525160	0.827047	0.770260
Adj. R- Square	0.335224	0.757866	0.678364
F-statistic	2.764933	11.95481	8.381857

\* shows significance and t-test values are shown in parenthesis

Results of equation 1 show that lagged FDI has positive and significant short-term relation with employment level while lagged GDP has negative and insignificant relation with employment level. The coefficient of the ECT of employment variable is -0.287621. It carries the correct sign and is significant as well. The negative sign of ECT term shows that employment is converging to its long-run equilibrium with the rate of 28%.

The coefficient of the ECT of FDI and GDP is also negative and significant. It shows stability of the model and convergence towards the equilibrium path in case there is a disturbance in the system. The significant coefficients of the

error correction terms for each time series depict that they cause one another in the long-run.

### 5.5. Diagnostic tests results:

To check the problem of autocorrelation, normality, and heteroscedasticity, the present study has applied standard diagnostic tests and the results are given in table 7:

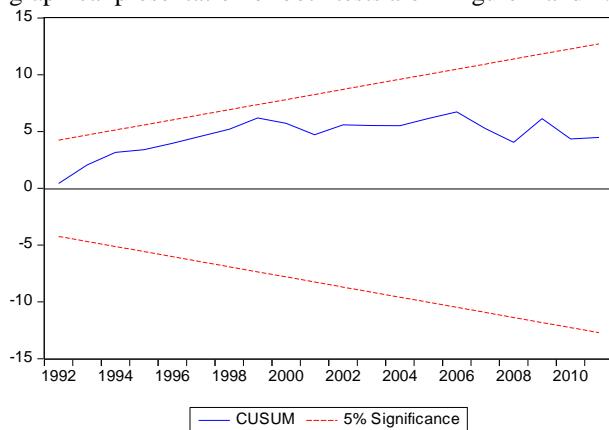
**Table 7: Results of Diagnostic tests**

Test Statistics	Prob.	Conclusion
LM Test (0.467269)	0.5067	No auto correlation
Jarque-Bera (0.610921)	0.736784	Error terms are normally distributed
Breusch Pagan Godfrey(.982190)	0.8738	No Heteroskedasticity

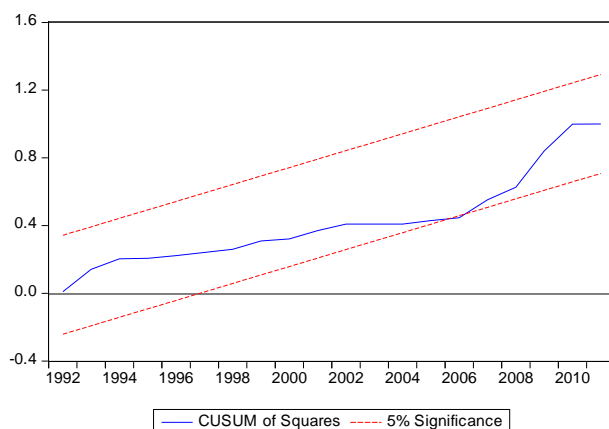
The results suggest the absence of heteroskedasticity and serial correlation. Moreover, the residuals are also normally distributed. Satisfactory outcomes of diagnostic tests indicate the validity of the estimates.

### 5.6. CUSUM and CUSUMSQ Test of Stability:

The CUSUM and CUSUMSQ tests are applied to check the stability of the model. The model is considered stable if the lines of the test remain within the 5% critical bounds. The graphical presentation of both tests are in figure 1 and 2.



**Figure 1: Plot of cumulative sum of recursive residuals**



**Figure 2: Plot of cumulative sum of squares of recursive residuals**

Both the plots do not cross the critical value lines. This confirms the structural stability of the model and hence, the parameters can be safely used for policy purposes.

## 6. CONCLUSION AND RECOMMENDED POLICIES

Employment generation has remained one of the primary objectives of the governments all around the globe. Lack of employment opportunities result in social problems which become worse for lower income countries where institutions are weak and social welfare programs are not the top priority of the policymakers. In this regard, FDI can prove to be a tool for stimulating employment and growth of the economy. Thus, the question regarding the impact of FDI on employment levels in host countries is of immense importance, especially with reference to developing countries. The present study aims to check the impact of FDI on the employment level by taking annual data for Pakistan for the period 1980 to 2012. The results suggest that FDI negatively impacts the level of employment in an economy and positively impacts its GDP. Based on these results, the policy makers should not always expect FDI to be a source of creating new employment opportunities in the economy.

Our recommendations identify that if developing countries are to increase the employment opportunities then focus of policymakers should not just be to attract FDI, but the focus of policies should be broadened to directing FDI flows appropriately. The favorable outcome of FDI on employment depends on the balance between the crowding-in effects of FDI i.e. opening up of new avenues for domestic entrepreneurs and the crowding-out effects of FDI i.e. displacement of local firms due to increased competition from foreign firms. Foreign investors in Pakistan usually limit their businesses with local firms because they import most of their inputs and often employ foreign nationals. Therefore, the government of Pakistan should formulate such policies that encourage foreign investors to create local linkages. This will help promote local industry and will significantly generate new employment opportunities. Furthermore, since the majority of Pakistan's labor force is associated with the agricultural sector, efforts should be made to direct FDI towards the agriculture sector so that Pakistan can experience a substantial increase in the employment opportunities.

Another reason for the decrease in the employment level in the course of net foreign inflow is the lack of skills in the workers to adapt to new and advanced technology. In this regard, the government of Pakistan should come forward and take steps to guard the economy against the harmful effects of FDI on employment. The government should open up vocational training centers and introduce a world-class education system. Better education and training opportunities can help generate employment opportunities from FDI.

Eventually, in order to maximize the benefits from increased FDI, there is a need to complement the policies for enhancing FDI inflow with those that increase the employment level.

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