Contribution of Foreign Direct Investment in Economic Development of Pakistan: A Human Development Perspective

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Abstract

The prime objective of the study is to scrutinize the contribution of foreign direct investment (FDI) in people-focused view of economic development in Pakistan over the period of 1972-2015. Realizing human centered view of economic development, this study uses human development index (HDI) as proxy of economic development along with real gross domestic product and inflation. Auto Regressive Distributed Lag (ARDL) bound testing technique is used to find out long run (LR) associations. Augmented Dickey-Fullers (ADF) test is applied to identify the unit root problem. Statistical soundness of the specified models and estimated coefficients is checked by residual diagnostic tests and stability diagnostic tests. Results of all specified models reveal robust long run relationship between dependent and explanatory variables, and adjustments of short deviations from equilibrium in the long- term. Sensitivity analysis confirms that initial results are robust. FDI has positive and significant impact on HDI with income and excluding income component. The results of this study highlight the prominence of FDI in order to improve level of development in Pakistan. The study proposes that government of Pakistan should has more FDI friendly policies in combination with growth augmenting and macroeconomic stability policies to achieve the dream task of human development as an explicit objective of economic development in Pakistan.

Keywords: Human Development, Economic Development, Foreign Direct Investment

1.   Introduction

FDI has become one of the key drivers of economic development and its importance continues to grow around the world. The increased role of FDI in emerging and developing economies has elevated expectations about its potential contribution to their economic development. Nations more open to trade and investment inflow tend to be more productive and grow quicker (Dollar, 1992; Sachs & Warner, 1995; Harrison, 1996; Frankel & Romer, 1999; Dollar & Kraay, 2004; Busse & Königer, 2012; Hoekman, 2017). As a stable and important source of external inflows, helping in technological transfer, supporting in technical know-how and managerial skills, increasing production capacity and creating employment opportunities, FDI is becoming more important for the development of a capital deficient country. "Pakistan's capacity to progress on economic development will depend on her performance in attracting FDI" (Atique *et al.*, 2004).

"The basic objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives" (UNDP,1990)**. "**Economic development is a multifaceted concept, embodying not just income and its growth, but also achievements on other fronts: reductions in infant mortality, higher life expectancy, advances in literacy rates, access to medical and health services, and so on" (Ray, 1998). Since the Second World War, there has been a long and endless debate over exact meaning of economic development and therefore economic literature is blended with many definitions and interpretations each emphasizing a certain facet of phenomenon of development. The literature on the definition and measurement of development highlight 'growth-oriented approach', 'basic need approach' and 'human development approach' (capability approach). Human development is a broad development paradigm, which concentrates on enlarging the human capabilities in order to enable individuals to live long and healthy lives (Anand & Sen, 2000). The human development approach of development takes its inspiration from the human capabilities approach proposed by Sen (1985, 1990, 1997). Sen has opined that there is a dire need to shift the reliability on traditional approaches towards the functioning and capability approach of evaluation of development. Sen emphasized on enhancement of 'human capabilities. The human development perspective of economic development accentuates on capacity building of people rather than how much they consume. From literature it can be concluded that economic development is wider term than economic growth. The growth is concerned with income while development encompasses

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so many other things. Measurement of economic development is also a complex business. Measurement depends on one's perception of economic development. Referring to main definition presented in literature the most commonly used indicators of economic development are real GNP/GDP, real per capita GNP/GDP, poverty, inequality, unemployment, health & education levels, gender inequality index, human development index, multidimensional poverty index.

Based on poor economic development indicators, Easterly (2001), declared Pakistan as a leading example of growth without development. Socio and economic outcomes in Pakistan are a mixture of inconsistencies. The countries in Asia, once behind Pakistan, are now better than Pakistan in indicators of development (Hussain, 2009). Development indicators of Pakistan are not comparable with neighboring countries such as Bangladesh, China, and India (Ali & Panhwar, 2017). One way of measuring a country's economic development progress is to look at its social, demographic and economic indicators. Economic, demographic, and social statistics of a country plays a vital role in making the strategies and outline of economic policies. Analysis of these statistics highlights overall performance and direction of development policies of a country. Figure1 gives a brief description of some of the most common development indicators of four countries. It is embarrassing to acknowledge that socio-economic indicators have not really improved by much in Pakistan. Pakistan (except multidimensional headcount poverty) ranks last in selected group of neighboring countries.

Figure 1: Comparative Development Indicators-2017

Source: Author's Construction based on Data of World Bank and HDR

Despite FDI friendly policies, investments inflows are not very encouraging in Pakistan. Figure 2 shows 2007 was the only year in which net inflows of FDI as a percentage of GDP in Pakistan were high. After 2007, there is drastic decline due to political uncertainty, energy crisis, terrorism, weak foreign policy, financial crisis etc. Figure 2 shows that FDI increased only during 2015—2017. This increase can be credited to the CPEC. Figure-2 shows trends of FDI net inflow as percentage of GDP in comparison with China, India, and Bangladesh.

Figure 2: FDI Net Inflow (Percent of GDP)
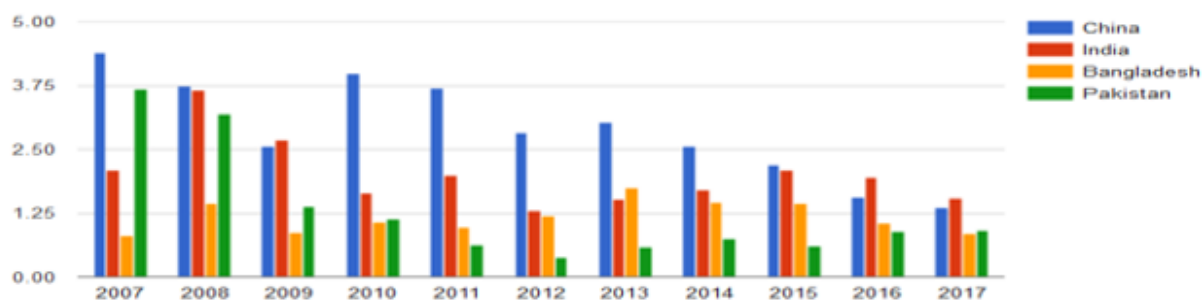
Source: World Bank

There is dearth of studies that analyze and provide conclusive proof of the contribution of FDI on human-focused perspective of development, particularly in Pakistan. Few cross-country studies explored this issue but in most of these studies, Pakistan has not been included. In addition, findings of the empirical researches are mixed. The diverse results have not only made this topic interesting but also left room for future research in this area generally and particularly for Pakistan. Moreover, drawing country specific development lessons from cross-country evidence is dubious (Pritchett, 1996; Shan, 2002).

Given the gloomy performance in development indicators, a key challenge faced by Pakistan is to come up with the policies that would help to improve human well-being in order to secure long-term economic development and make the country resilient to dangers in future. Realizing people-focused view of economic development and significance of FDI in achieving development goals as discussed so far, this study focused whether FDI has substantial impact on human development in Pakistan. This study would provide a unique contribution to the literature of human focused view of economic development generally for developing countries and particularly for Pakistan. After introduction, section two covers relevant literature review. Section three consists of methodology (including model specification), variables and data. Section four is about estimation analysis. Section five gives conclusion, recommendations.

2. **Literature Review**

Classical and new classical growth and development theories are directly or indirectly a main reference point for the literature on socioeconomic spillovers of foreign direct investment. The two-gap model of Chenry and Strout (1968) is one of the growths and development models that has also justified the importance of FDI inflows in the process of economic development in developing nations. According to two-gap theory, saving gap (SG) and foreign exchange gap (FEG) are two independent types of hindrances that hamper the development of developing countries. If the saving gap (SG) > foreign exchange gap (FE) the economy will be experiencing saving constraints and vice *versa*. In the long run, SG and FEG can be filled through foreign inflows. Foreign inflows are needed to remove SG and FEG so that the desired growth and development target could be achieved in developing countries. According to Endogenous Growth Theory, lowering economic barriers will pace the process of growth and development in the long run. FDI is an essential part of an effective international economic system and a major ingredient to development. The Harrod-Domar (H-D) model advocates that the economic growth depends on the productivity level of of investment i.e. the capital output ratio (K/Y) and savings. The H-D model identified dual role of investment. Investment not only leads to generate income but it also enhances the production capacity of the economy (Jhingan, 1992). One of the important neoclassical theories (models) of growth has been the slow-growth model propounded by American Economist Robert Solow. This theory actually developed in reply to the troubling implications of the H-D model. According to Solow growth theory, per worker output (Y/L) depends upon savings, population, and technology in the long run. The Solow model foresees convergence of per capita income among developed and developing countries sharing similar fundamentals. In neoclassical thinking, as

characterized by the Solow, savings-centered theory, poor nations are viewed as deficient in physical capital investment. Accordingly, it seems that inflows of FDI could only have a positive impact on development of poor nations (Cypher and Dietz, 2005).

Developing, emerging and economies in transition have increasingly considered FDI as a source of economic development, modernization, income growth and employment (OECD, 2002). Empirical evidences on the impact of trade and foreign direct investment on development indicators are given in a number of panel and time series studies. Reviews of main studies that are generally relevant to this study are concluded.

Constructive contribution of foreign direct investment on economic prosperity has been recognized by many empirical researches (Bende & Ford,1998; Dees, 1998; De Mello, 1999; Soto, 2000; Dollar & Kraay,2001). On the contrary, it is also argued that FDI negatively influence economic growth (Bornschier, 1978; Dutt, 1997; Saltz, 1992). Despite difference in methodologies, a positive relationship between FDI and poverty has been recognized by many empirical researches (Jalilian & Weiss, 2002; SPDC, 2006; Zaman et al., 2012; Gohou & Soumare, 2012; Fowowe & Shuaibu, 2014; Shamim et al., 2014; Israel, 2014; Ucal, 2014; Soumare,2015). Some empirical studies identified undesirable impact of FDI on poverty ((Huang et al., 2010; Ali & Nishat, 2010).

Some studies (Sharma & Gani, 2004; Arcelus et al., 2005; Subbarao, 2008; Reiter & Steensma, 2010; Tintin, 2012; and Lehnert et al., 2013) use human development index indicators as dependent variable. Sharma and Gani (2004), using fixed-effects model for the period of 1975-1999, found positive impact of FDI on HDI for both low-income countries and middle- income countries. Arcelus et al. (2005) found positive and significant effect of FDI on income, educational attainment, and longevity. Subbarao (2008) identified supply and demand side effect of FDI on the host country's economic development. In a panel study, Reiter and Steensma (2010) discovered robust positive association between foreign direct investment and human development in the presence of low corruption in developing countries. Foreign direct investment can upsurge education by pouring the skilled workers demand and the requirement to have commercial activities and innovative technologies (Aitken et al, 1996). The rise in skilled and educated workers demand spreads in the country, pouring the literacy and education to higher levels. This situation also leads improvements in life expectancy in FDI recipient country. Increased inflows of FDI also result in improved infrastructure (including energy utilization, communications, and roads) (Konings, 2001; Lundvall et al., 2002). Makki and Somwaru (2004) analyzed the impact of FDI and trade liberalization PCI of 66 developing countries over three decade (1971-1980, 1981-1990, 1991-200). They found significant positive impact of FDI on per capita GDP of developing nations. SPDC (2006), using time series data, empirically examined linkages of FDI with poverty and inequality in Pakistan. This study found that FDI had undesirable impact on inequality. Shabaz (2008) found that FDI had positive favorable effect on poverty reduction in Pakistan. Zia and Nishat (2009) assessed the impact of FDI on employment of India, China, and Pakistan for the period of 1985 to 2008. They found that only GDP had a significant impact upon level of employment in all three countries. They found that FDI had no impact upon the creation of employment in Pakistan. According to Meyer and Sinan (2009) increase in inflows of foreign direct investment will increase overall economic development over the time. Tintin (2012) applied fixed effect model using panel data of different countries (38 developed countries, 29 least developed, 58 developing) over the period of 1980-2010. He examined influence of FDI on growth and development. Using human development index (HDI) and its sub-indexes (dependent variables) concluded that FDI has relatively greater impact on HDI in developing countries. Lehnert *et a*l. (2013) using panel data of 175 countries, investigated contribution of FDI inflow on human development. They found constructive influence of FDI on host countries. Results of this study confirmed positive contribution in the improvements of all components of HDI (standard of living, education, life expectancy) for the host countries. Azam et al (2015) used a fixed-effects model to examine impact of FDI on gross secondary school enrolment over the period of 1981-2013 for 34 developing countries. The results of this study revealed that FDI had positive effect on human capital in developing countries. Hussain and Haque (2016) used an ARDL model to analyze the long run association between FDI and per capita GDP growth in Bangladesh over the period of 1973 to 2015. They found positive significant long run relationship between FDI and per capita GDP in Bangladesh. Hoekman (2017) argued that the main important route through which trade and FDI policy can support development is by increasing economic growth. Despite considerable evidence of the impact of FDI on economic growth, the empirical work on the contribution of FDI inflow in human development, particularly in developing countries including Pakistan is

sparse.

Development is a multifaceted process, and it would be reckless to claim that foreign direct investment only account for improvements in human development in Pakistan. Some other factors will also influence the process of economic development. In this study, macroeconomic stability (inflation) and real gross domestic product are used as control variables. Economic growth is necessary condition of economic development. Growth in GDP (economic growth) is the key transmission channel. Without domestic macroeconomic stability, domestic investors and foreign investors may stay away and resources particularly from direct investments   will be diverted elsewhere. Lower inflation helps everybody; but probably helps the poor more. Lower inflation reduces investor's uncertainty.

2.2   Conceptual Framework

This study parsimoniously specifies the conceptual framework based on development theory and empirical studies. The framework is shown in Figure 3.

Figure 3: Conceptual Framework
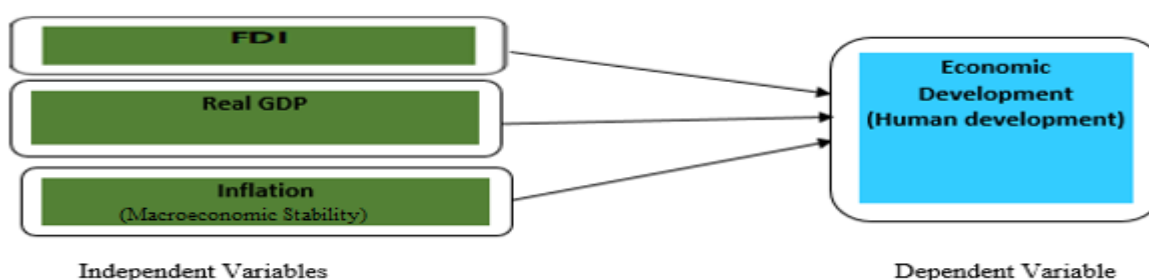
2.3   Hypotheses

Following are the hypotheses:

Ha1: FDI has positive impact on economic development (human development)
Ha2: GDP   has positive impact on economic development (human development)
Ha3: Inflation has negative impact on economic development (human development)

3.   Methodology (Model Specification, Variables, Data)

This is an explanatory time series study. Contribution of FDI in economic development with reference to Pakistan is explored using ARDL model. This study used annual data, covering the period from 1972 to 2015. Data is obtained from World Development Indicators (WDI), Economic survey of Pakistan various reports, UNDP (annual reports) and Social Policy and Development Centre (annual reports). Empirical investigations are performed using E-Views.

3.1   Estimation Techniques

Many techniques are used in quantitative research to test the long run relationship between variables. However, these techniques are applicable when series are only 1(1). Pesaran et al*.,* (2001) developed Autoregressive Distributed Lag (ARDL) technique of co-integration. ARDL technique has some extra advantages (Banerjee et al., 1998; Pesaran, 2001). This can be applied independently of whether the series are I (0) or I (1) or mixed. Short run and long run parameters in model can be estimated simultaneously. One of the main advantages of this technique is that estimation is possible even when the independent variables are endogenous.

3.2   Unit Root Test (stationary test) and Diagnostic Tests

One of the important issues in the time-series is the unit root problem. A time series X_t has unit root if its probability distribution changes over time. A series is considered stationary if it has a constant mean, variance, and covariance (Asteriou, 2006). Augmented Dicky Fuller (ADF) test is applied to check unit root and order of integration. Akaike Information Criterion (AIC) is used for optimal lag selection. Breusch-

Pagan-Godfrey (BPG), Breusch-Godfrey (BG) LM test, , Ramsey Test, and Jarque Bera (JB) tests are used to observe heteroscedasticity, auto- correlation, , general misspecification and normality, respectively. Structural stability of the model is assessed by the CUSUM and CUSUMSQ.

3.4   Model Specifications
The theoretical and conceptual framework relating to FDI and development can be traced from theoretical and empirical literature. New classical economic thinking signifies the importance of FDI in aggregate production function in poor nations. FDI inflows in a capital deficient country, enhance capital to labor ratio and per capita income (Cypher & Doetz, 2005). In setting up FDI-human development equations, it is drawn from the capabilities approach that human development depends on longevity, education and a decent standard of living (see Anand & Sen, 1992; Anand and Sen 2000b; Ghosh, 2000). This study parsimoniously specifies the conceptual framework based on development theory and empirical studies.

Following is the mathematical functional form of conceptual framework
  Economic Development (HDI) =f (FDI, Control variables)

This model is divided in to two following equations:

HDI Without income component

$$\ln HDI^{*}{}_{t} = \beta_{\circ} + \beta_{1} \ln FDI_{t} + \beta2 \ln GDP_{t} + \beta_{3}INF_{t} + \varepsilon_{t} \cdots\cdots (1)$$

HDI With income component

$$\ln HDI_{t} = \alpha_{\circ} + \alpha_{1} \ln FDI_{t} + \alpha_{2} \ln GDP_{t} + \alpha_{3}INF_{t} + \varepsilon_{t} \cdots (2)$$

Ln = log

Logarithmic form has some advantages such as estimated coefficients are treated as partial elasticity and each of them shows percentage change. Furthermore, logarithmic form reduces the variability in data and potentially lessens the likelihood of the problem of heteroscedasticity in the specified model (Ndikumana, 2005; Ali *et al.*, 2013).

 HDI^{*} = Human development index without income, HDI is with income
FDI   = Foreign direct investment (net)
GDP   = Gross domestic production (real)
INF= inflation rate
ε = error term (ε~IID $(0,\sigma^{2}$); for t= 1,....,n)
In model-1 $\beta_{\circ}$ is the intercept term $\beta_{1},\beta_{2},\beta_{3}$, are the slope parameters. *Prior* expectations are that β_1, β_2> 0 while β_3 <0

In model- 2 α_{0} is the intercept and $\alpha_{1},\alpha_{2},\alpha_{3}$ are the slope parameters. α_1, α_2 > 0, and α_3 < 0.
The specification of ARDL model for FDI -HDI is found by transforming the above model as below:

$$\Delta ln HDI^{*}{}_{t} = \lambda_{0} + \sum_{i=1}^{k}\lambda_{1i}\Delta ln HDI^{*}{}_{t-i} + \sum_{i=0}^{k}\lambda_{2i}\Delta lnFDI_{t-i} + \sum_{i=0}^{k}\lambda_{3i}\Delta lnGDP_{t-i} + \sum_{i=0}^{k}\lambda_{4i}\Delta INF_{t-i}$$
$$+ \psi_{1}ln HDI^{*}{}_{t-1} + \psi_{2}lnFDI_{t-1} + \psi_{3}lnGDP_{t-1} + \psi_{4}INF_{t-1} + \varepsilon_{t} ....1.1$$
$$\Delta lnHDI_{t} = \lambda_{0} + \sum_{i=1}^{k}\lambda_{1i}\Delta lnHDI_{t-i} + \sum_{i=0}^{k}\lambda_{2i}\Delta lnFDI_{t-i} + \sum_{i=0}^{k}\lambda_{3i}\Delta lnGDP_{t-i} + \sum_{i=0}^{k}\lambda_{4i}\Delta INF_{t-i} + \psi_{1}lnHDI_{t-1}$$
$$+ \psi_{2}lnFDI_{t-1} + \psi_{3}lnGDP_{t-1} + \psi_{4}INF_{t-1} + \varepsilon_{t}$$

The   k denotes number of lags used for each variable.

Where Δ denotes the first difference. Whereas, $λ_1$, $λ_2$, $λ_3$ and $λ_4$ are short-run coefficients. $while$, $ψ_1$, $ψ_2$, $ψ_3$, and $ψ_4$ are coefficients of long-run estimation.

Following are the hypotheses of co integration:

Null Hypothesis of no long run relationship

$$H_0: ψ_1 = ψ_2 = ψ_3 = ψ_4 = 0$$

Alternate Hypothesis (there is long run relationship

$$H_a: ψ_1 ≠ ψ_2 ≠ ψ_3 ≠ ψ_4 ≠ 0$$

The ARDL-ECM model contains of difference of the variables and error correction term. The error correction -ARDL model is expressed as follows:

$$\Delta ln\ HDI^*{}_t = δ_0 + \sum_{i=1}^{k} δ_{1i} \Delta ln\ HDI^*{}_{t-i} + \sum_{i=0}^{pk} δ_{2i} \Delta lnFDI_{t-i} + \sum_{i=0}^{k} δ_{3i} \Delta lnGDP_{t-i} + \sum_{i=0}^{k} δ_{4i} \Delta INF_{t-i} + ΩEC_{t-1} + ε_t$$

$$\Delta lnHDI_t = δ_0 + \sum_{i=1}^{k} δ_{1i} \Delta lnHDI_{t-i} + \sum_{i=0}^{pk} δ_{2i} \Delta lnFDI_{t-i} + \sum_{i=0}^{k} δ_{3i} \Delta lnGDP_{t-i} + \sum_{i=0}^{k} δ_{4i} \Delta INF_{t-i} + ΩEC_{t-1} + ε_t$$

Where Δ is the first difference operator. $δ_1$, $δ_2$,$δ_3$, and $δ_4$ are the short-term elasticities, $Ω$ is an adjustment coefficient and EC_{t-1} is the lagged error correction term.

3.5   Variables and Data
Human Development Index (HDI)
HDI presents better and greater view of economic development as compared to other measures (Anderson, 2010). Taking inspiration from people-focused view of economic development and its alignment with functioning capability, this study uses HDI as proxy of economic development. HDI calculated by using UNDP (2005), methodology. The new version of HDI calculation is introduce by UNDP in 2010. However, given the lack of long time series of the indictors in HDI composition, researcher adopted 2005 methodology in this study.

FDI
FDI is a category of cross-border investment associated with a resident in one economy having control or a significant degree of influence on the management of an enterprise that is resident in another economy. FDI in Pakistan and other countries reflects the foreign ownership of production facilities. Data of FDI is obtained from WDI.

$$FDI = \frac{FDI\ (net)}{GDP}$$

Inflation
Inflation is used as a proxy for macroeconomic stability. Macroeconomic stability describes a national economy that has minimized vulnerability to shocks. Macroeconomic stability creates certainty and confidence and this stimulates economic activities. Price changes are an important path through which FDI can affect economic development. Inflation also captures effect of monetary and fiscal policy. This study uses inflation as measure of macroeconomic stability as a control variable. Data is obtained from WDI.

Real Gross Domestic Product (GDP)

Real GDP is inflation adjusted GDP. Data of real GDP is obtained from   World Development Indicators. It captures growth channel.

4   Empirical Analysis
4.1   Unit Root

Results of ADF indicate that all variables are stationary at first difference except inflation. Inflation is integrated at *I(0)* and other variables are integrated at *I(1).* This mixed order of integration endorses use of ARDL bound test technique.

Table 1: Unit-Root Estimation

	ADF (with Intercept , without trend)				ADF (with trend and intercept)			
	Level	Prob.	1st Differenc	Prob.	Level	Prob.	1st Difference	Prob.
LHDI	-2.375976	0.1546	-6.552226	0.0000	-2.757244	0.2206	-6.901512	0.0000
LHDI*	-0.397301	0.9002						
			-5.640955	0.0000	-1.764565	0.7035	-5.972230	0.0001
LFDI	-2.846397	0.0872	-4.820620	0.0003	-2.55736	0.3008	-5.270344	0.0006
LGDP	-2.283779	0.1819	-4.080214	0.0028	-0.601194	0.9736	-4.754395	0.0023
INF	-3.411772	0.0162	-7.135287	0.0000	-3.259416	0.0175	-7.272874	0.0000

LHDI and LHDI* are with and without income component, respectively.

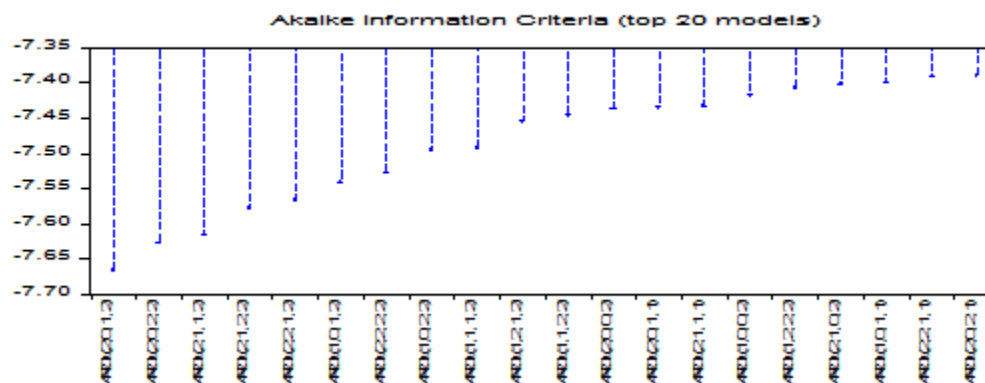**Model- 1   FDI - HDI***

(HDI without income component)

$$\ln HDI *_{t} = \beta_{\circ} + \beta_{1} \ln FDI_{t} + \beta_{2} \ln GDP_{t} + \beta_{3} INF_{t} + \varepsilon_{t}$$

Lag Length Selection

Figure shows that AIC (-7.67) of first model out of top twenty is lowest therefore this model is selected for estimation.

Figure 4 : Lag Length Selection

Akaike Information Criteria (top 20 models)

Co-integration Analysis (ARDL bound tests)

F-stat. 5.848 > 4.35 . It is concluded that variables in specified model have long run association.

Table 2: ARDL Bound Testing

F-Statistic	5.848759	
Critical Value Bounds		
Significance	Bound(Lower)	Bound (Upper)
5%	**3.23**	**4.35**

The coefficient of FDI (significant at 5%) is 0.016. The positive sign on the coefficient of FDI indicates direct relationship between FDI and human development: the higher the FDI inflow , the greater the human development in long run. The results indicate that for 1 % rise in FDI , the HDI rises by 0.016%. The coefficient of GDP is 0.30 (at 1%). Real GDP is also found to have   positive and statistically significant contribution in human development. The results show that for 1 % rise in GDP , the HDI upsurges by 0.30%.   The coefficient of   INF is 0.001 (significant at 10%). The negative   sign on the coefficient demonstrates an inverse relationship between inflation and human development in LR: the higher the inflation , the lower the human development. The results indicate that for 1 % rise in INF, the HDI declines by 0.001%.

Table 3: Coefficients (long run)

Dependent Variable LHDI*

	Coefficient	Std. Error	t-Stat	P-values
LFDI	0.0166	0.0055	2.9925***	0.005
LGDP	0.3070	0.0076	39.9940***	0.000
INF	0.0011	0.0006	1.7111*	0.097
C	-8.5411	0.1952	-43.7491***	0.000

Where (*) and (***) denotes 5% and 1% level of significance

Short Run Illustration

The coefficient of error correction term (EC (-1)) is negative and statistically significant (at 5%). The pace of adjustment to LR is 0.34, which means that the deviation from equilibrium will be adjusted to long run equilibrium at the pace of 34%.

Table 4: Coefficients (short run)

DLHDI* (Dependent Variable)

	Coefficient	S. E	t-Stat.	P-values
D(LHDI(-1))	0.3011	0.1239	2.4294**	0.021
D(LFDI)	0.0057	0.0013	4.1355***	0.000
D(LGDP)	0.2804	0.0509	5.4989***	0.000
D(INF)	-0.0003	0.0002	-1.1986	0.239
D(INF(-1))	-0.0007	0.0002	-3.1682***	0.003
EC (-1)	-0.3467	0.0836	-4.1459***	0.000

R-sq. =0.64
Adj. R=0.54
F-stat. =6.908 (0.00033)
D.W=2.07

Where (**) and (***) denotes 5% and 1% level of significance, respectively.

Table 4 shows that the coefficient of FDI (statistically significant at 5%) is 0.005. The positive sign on the coefficient of FDI demonstrates positive association between FDI and human development in SR. FDI has positive and statistically   significant effect on human development. The coefficient (statistically significant at 1%) of GDP is 0.280. The positive sign on the coefficient of GDP   indicates direct relationship between GDP and human development in SR. The coefficient of lagged INF is 0.0007. The negative sign on the coefficient demonstrates an inverse relationship between inflation and human development in SR: the higher the inflation , the lesser the human development. The results indicate that for 1 % increase in INF, HDI decreases by 0.0007%.

Table 5: Diagnostic Tests

| B-G LM Test (Autocorrelation)			
F-statistic	0.813495	Prob.	0.4532
Observed *R-sq.	2.124909	Prob.	0.3456
Heterosk. Test: B.P.G			
F-stat.	1.745563	Prob.	0.1404
Obs*R-sq.	9.655406	Prob.	0.1399
J.B Normality Test			
J-B	1.840	Prob.	0.3984
.Ramsey RESET Test			
F-sta.	0.574120	Prob.	0.4308
Likelihood ratio	0.836146	Prob.	0.3605

Table 5 indicates that statistically model is robust. The Figure 5 and 6 indicate that model is stable.

Figure 5: Plot of CUSUM
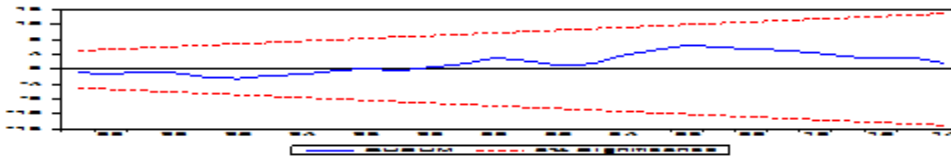
Figure 6: Plot of CUSUMSQ
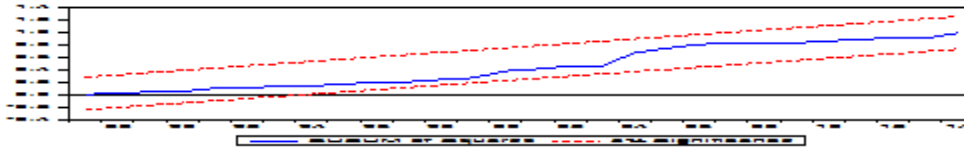
Model-2   **(FDI-HDI)**

(HDI with all component)

$$\ln HDI_t = \beta_\circ + \beta_1 \ln FDI_t + \beta_2 \ln GDP_t + \beta_3 INF_t + \varepsilon_t$$

Figure 7 depicts that AIC (-7.66) of first model out of top twenty is lowest therefore this model is selected for estimation.

Figure 7: Lag Length Selection
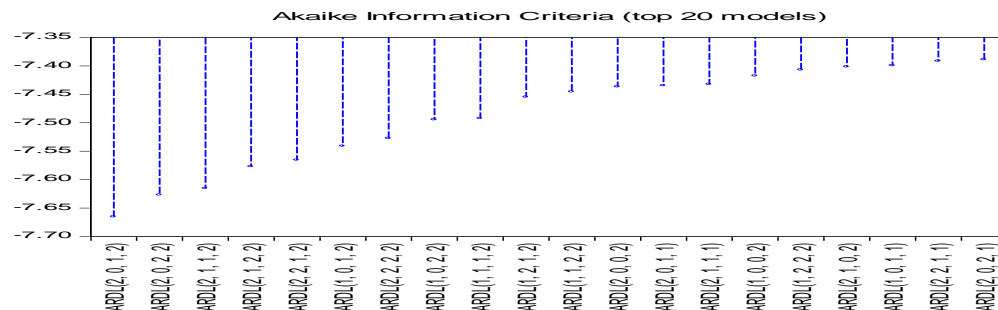
Co-integration Analysis (ARDL bound test)

Table 6 shows Bound test results. F-statistic 4.532 > upper bound value (4.35)   at 5% level of significance. On the basis of results, we reject null hypothesis. From results, we conclude that there is a long run association between variables.

Table 6: ARDL Bound Testing

Bounds		
Sig.	Bound(Lower)	Bound (Upper)
5%	*3.23*	*4.35*

The coefficient of FDI is 0.027 (significant at 5%). The positive sign on the coefficient of FDI indicates positive relationship between FDI and human development in long run (LR) . The results indicate that for 1 % increase in FDI, HDI increases by 0.027%. FDI has positive and statistically significant effect on human development. The coefficient of GDP is 0.313 (significant at 1%). The positive sign on the coefficient of GDP   indicates positive relationship between GDP and human development in LR. The results indicate that for 1 % increase in GDP, the HDI increases by 0.31%. The coefficient of INF is 0.002 (significant at 10%). The negative sign on the coefficient demonstrates an inverse relationship between inflation and human development in LR: the higher the inflation , the lower the human development. The results indicate that for 1 % increase in INF, HDI decreases by 0.002%.

Table 7: Coefficients (long run)

LHDI (Dependent Variable)				
	Coefficient	Std. Error	t-Stat	P-values
LFDI	0.0278	0.0103	2.6851**	0.011
LGDP	0.3134	0.0139	22.4399***	0.000
INF	-0.0023	0.0013	-1.7722**	0.086
C	-8.5503	0.3573	-23.9298***	0.000

(**), and (***) shows 5% and 1% level of significance, respectively.

Short Run Illustration

In this model the coefficient of error correction term (EC (-1)) is negative and statistically significant (at 5%). The speed of adjustment to LR is 0.24, which means that the deviation from equilibrium will be adjusted to long run equilibrium at the speed of 24%.

Table 8: Coefficients (short run)

Dependent Variable DLHDI				
	Coefficient	S. E	t-Stat.	P-values
D(LHD(-1))	0.3405	0.1372	2.4812***	0.018
D(LFDI)	0.0069	0.0018	3.8048***	0.000
D(LGDP)	0.1992	0.0692	2.8796***	0.007
D(INF)	-0.0004	0.0003	-1.2154	0.233
D(INF(-1))	-0.0010	0.0003	-3.2622***	0.002
EC (-1)	-0.2484	0.0664	-3.7371***	0.000

R- sq. = 0.54
AdJ. = 0.43
F-stat. = 3.204 (0.009)
D-W = 1.99

Where (*), (**) and (***) denotes 10%, 5% and 1% level of significance

The estimated coefficient of FDI is 0.006. The sign (positive) on the coefficient of FDI demonstrates that there is direct relationship between FDI and human development: the higher the FDI inflow , the greater the human development in SR. FDI has positive and statistically significant effect on human development. The coefficient of GDP is 0.199. The sign (positive) on the coefficient of GDP indicates direct relationship between GDP and human development in SR. The coefficient of lagged INF is 0.001. The negative sign on the coefficient demonstrates an inverse relationship between inflation and human development in SR: the higher the inflation , the lesser the human development..

Diagnostic Test

The outcomes in table 9 show that model is good fit and statistically sound.

Table 9: Diagnostic Tests

B-G LM Test (Autocorrelation			
F-stat.	0.902305	Prob.	0.4167
Obs*R-sq.	2.343299	Prob.	0.3099
Heterosk. Test: B.P.G			
F-stat.	1.905569	Prob.	0.0949
Obs*R-sq.	13.18603	Prob.	0.1056
J.B Normality Test			
Jarque-Bera	0.514	Prob.	0.7628
Ramsey RESET Test			
F-stat.	3.140737		0.0865
Likelihood	3.982635		0.6460

Following Figure 8 and Figure 9 confirm stability of the model**.**

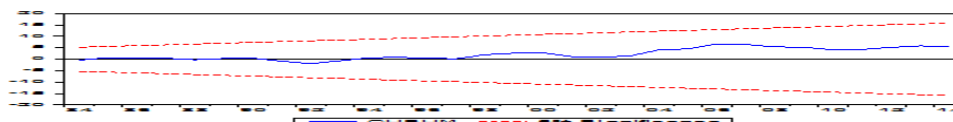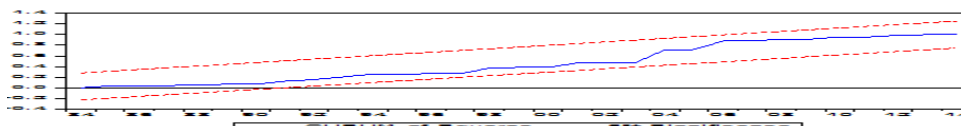Figure 8: Plot of CUSUM

Figure 9: Plot of CUSUMSQ

5.   Conclusion

The study examines contribution of FDI in economic development in Pakistan over the period of 1972 to 2015. The study used human development index, with income and without income component, as proxy of economic development. Two models were specified to achieve stated objectives. In both models of FDI -human development, real gross domestic product and inflation (as proxy of macroeconomic stability) are control variables. In both FDI-development models (FDI-HDI[*], FDI-HDI), F-statistics indicate co-integration between variables incorporated in all specified models. The coefficients of error-correction (EC-1) are significant (at 5%) and negative. The feedback coefficients in both models suggesting adjustment process in the long run at the speed of 34% and 24% respectively. Residual diagnostics test ensure statistical soundness of models. Stability diagnostics tests confirm estimated coefficients are stable and reliable. Real gross domestic product has positive and significant effect on development in the long run and in the short run. Estimated coefficients of the difference of lagged inflation are negative and significant in both models in the short run. However, estimated coefficient of inflation is negative and significant at 10% when income component is excluded from HDI. Size of coefficient of inflation in all models remains very small. According to economic theory, necessities are less sensitive to rise in price. Education and heath are necessities; therefore, these are relatively less sensitive to price.

Empirical findings confirm constructive and statistically significant (at 5% level of significance) influences of FDI on human- focused sight of economic development in the long run. Results indicate that FDI elasticity of human development index in the long run is 0.016% and 0.027% respectively. Both coefficients are economically acceptable and statistically significant at 5% level of significance. FDI contribution in development is also optimistic and statistically significant at 5% level on HDI. Though, influence of FDI on HDI is very small as compared to long run coefficients, which means human development is relatively more sensitive to FDI in the long run. The regression results support our Hypothesis: the inflow of FDI in Pakistan has significantly enhanced its economic development (human development). In general, findings are synchronized with the studies of Sharma and Gani (2004), Arcelus et al. (2005), Subbarao (2008), Reiter and Steensma (2010), Tintin (2012), Lehnert *et.al* (2013).

6. Recommendations

The results suggest policy-makers to consider FDI as determinant of human development and treat FDI as part of countries economic development policies. The study recommends that policy makers should have more FDI friendly policies in conjunction with growth enhancing and macroeconomic stability policies to achieve the ultimate objective of human development in Pakistan. Empirical results illustrate FDI as an important conduit for improvements of human development in Pakistan, consequently the study advocates that government of Pakistan should provide conducive and competitive environment to the foreigner investors. FDI inflows enhance production capacity and create employment opportunities in host country. Therefore, along with FDI friendly policies, FDI inflows channeled towards labor-intensive industry are particularly more favorable for labor abundant developing countries like Pakistan. Pursuing this policy, we can also engage and capitalize youth of Pakistan, which is a substantial proportion of our total labor force. Results reveal that rise in inflation (macroeconomic instability) hampers human well-being in Pakistan, especially in the short run. Accordingly, it is recommended that more efforts should be made by the policy-makers and government to ensure general price level to remain low or stable.

The research does not claim that FDI is the only factor of overall human development in Pakistan. In today's globalized world, results of this study highlight the significance of FDI in order to improve level of development in Pakistan. Furthermore, conclusions of this research do not demonstrate that FDI is the only element that can improve human development in Pakistan without participation from the government and society. Measurement of economic development depends on one's perception of economic development. Referring to human development (people-focused) perspective of economic development presented in literature, this research used HDI as measure of economic development. Use of other measures such as Multidimensional Poverty Index (MPI), may produce notable conclusions.

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