International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies

http://TuEngr.com

PAPER ID: 10A18J

RELEVANCE OF FOREIGN DIRECT INVESTMENT FOR SUSTAINABLE DEVELOPMENT IN PAKISTAN

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ARTICLEINFO

Article history:
Received 31 May 2019
Received in revised form 15 August 2019
Accepted 12 September 2019
Available online 30 September 2019

Keywords:
Sustainable development index (SDI); FDI; Environment, Social Sector Development; Time Series.

ABSTRACT

This study aims to measure the sustainable development index (SDI) in Pakistan and to explore the role of foreign direct investment (FDI) for sustainable development (SD). For measuring SDI thirteen traditional indicators of SDI, are utilized. After normalizing each variable and considering its relationship with SD, the index is constructed by averaging. Then time series analysis from 1980-2016, is used to find out the relationship between FDI and SDI along with exploring the strength of the relationship by decomposing SDI into major components of economic, social and environmental. The study concludes that SD in Pakistan is not impressive while showing stagnant and volatile performance. It is further observed that relevance of FDI is slightly optimistic not only with SD but also with its components. This study also highlights that FDI could only be positive if utilized under controlled atmosphere of pro-sustainable public policies and affirms prudent utilization of FDI for SD.

Disciplinary: Multidisciplinary (Economics, Financial Engineering, Environmental Policy/Management).

1. INTRODUCTION

Future generations and neighboring regions could not be deprived just because that generation of the day needs development. For sustainability, it is necessary to travel on a development trajectory that facilitates all the generations, communities and regions. In the last several decades, developing nations are competing for foreign direct investment (FDI) without considering the side effects. Theorists mention FDI as a correlate of economic growth. The major role of FDI for poverty reduction depends upon attributes of developing world (Mayne, 1997).In case of weak institutions, poor state of policy implementation, slower speed of employment generation with low level of

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economic activities and collapsing state of social structure FDI may affect growth but not necessarily control poverty and inequality. FDI is also responsible for environmental degradation on account of multinational corporations' (MNCs) operations (WWF, 2000).Certain questions are marked on FDI for developmental path in developing economies while considering growth, poverty, inequality, and environment. Enhancement of growth with environmental degradation and increased poverty status could not be termed as SD. The developing countries' need is the development with ecological sustainability which highlights their complementariness.

In this background, this study takes into consideration FDI for SD in Pakistan. The core objective is to find out the relationship between FDI and SD. An attempt is also made to construct the index of SD in Pakistan.

2. LITERATURE SURVEY

The concept of SD might be termed as misleading if it considers ecological sustainability alone hence SD should have been defined as simultaneous sustainability of economic development and ecological conditions (Lele, 1991). The issue of SD got importance after massive enhancement of industrial development at the globe in the 1970s and same is formally restructured in 1972 during "Conference on Human Environment" in Stockholm. Thereafter the concept was refined by United Nations'(UN) initiatives (Brundtland Report titled "Our Common Future" in 1987, "Rio Earth Summit" in 1992, "World Summit on Sustainable Development in 2002", and "Rio+20" in 2012 respectively) while focusing over the needs of all generations, cooperation among nations, and partnership of public and private resources to achieve the goals of SD. Following millennium development goals (MDGs) UN has announced sustainable development goals (SDGs) in 2015 which faces severe criticism in discussions for overwhelming broadness, too vast to be captured, and contradictory goals (Pogge and Sengupta, 2016; Hak et al., 2016; Holden et al., 2016). Recent studies stressed careful attention for selection of indicators to measure SD.

Factors affecting two main components of SD i.e. poverty and environment were explored by Zhen et al. (2014) in the broader perspective of human welfare and found regional and individual elements to be most effective. In a panel data study across provinces of Italy, Pazienza et al. (2011) investigated the linkage of FDI with environmental sustainability and emphasized modifications of policies across provinces. Narula & Dunning (2000) specified a competitive environment both for multi-national enterprises (MNEs) and newly industrialized countries (NICs) in a globalized world and mentioned the need for the enriched economic horizon to attain sustainable growth. Franc (2015) analyzed the incidence and evolution of FDI in relation to environmental protection policies of the European Union (EU) and pointed out a bit more need for further regulations, harmonization, and collaborations. Kardos (2014) mentioned that the evidence for SD from EU had been presented under certain limitations such as ambiguousness in understanding of definition, methodological and measurement issues, however, a positive role of FDI was obvious. It also endeavored that such limitations should have been avoided for analysis.

Chung (2014) observed strongly that FDI proliferated and strengthened in the case of industries that cause harmful effects to host countries' environment. Trade liberalization was proved harmful and FDI could not be termed as clean in Tunisia and Morocco (Hakimi and Hamdi, 2016). Narula

and Dunning (2009 and 2010) attached externalities with MNEs investment and found that investment was not necessarily helped in the development process of host countries. Zeng and Eastin (2012) observed that FDI helped to improve the environmental quality of the host country on account of preventive measures adopted by firms receiving FDI and this also led to increasing preventive behavior of other non-FDI firms in competitive circumstances. UNCTAD (2010) mentioned the challenges of right policy balance, critical interface between investment and development and coherence between national and international perspectives in FDI investment. Bokpin (2017) mentioned that governance and institutions played a vital role for FDI to be positive in environmental sustainability. Beatrice (2013) argued that in poorer European Union (EU) countries higher level of FDI was positively correlated with sustainable growth but was not able to enhance productivity, competitiveness, and economic development. Voica et al. (2015) explored the link between FDI and SD and found several links to attain SDGs via these investments. The study also discovered importance of FDI specifically for environmental projects to improve greenhouse effects along with promoting social and economic goals. Bhumika and Jasmeet (2016) found a strong causal relationship running from FDI to advanced technology, enhanced wages of skilled labor, and SD.Melane-Lavado et al. (2018) focused innovative ways for SD and pointed out a positive role of FDI based on small and medium enterprises related to technological supply.

The FDI affects also the economic and environmental components of SD. Even a favoring impact of FDI on poverty was discovered by Gohou and Soumare (2012) in Africa but the impact was higher in poor regions as compared to wealthier regions. Similarly, the significance of impact was different for different regions. Evidence from ASEAN region favour the impact of FDI on poverty reduction (Jalilian and Weiss, 2002). Aaron (1999) pointed out that poverty reduction itself was a multidimensional process, hence, to probe poverty reduction process by single route e.g. growth, FDI et cetera would provide ambiguous results. Ucal (2014) traced the relationship between FDI and poverty within developing economies and found significant positive impact of FDI for poverty reduction. Klien et al. (2001) presented some preconditions for successful implementation of FDI to reduce poverty. Zhu et al. (2016) found negative role of FDI for carbon emissions in ASEAN region which proved halo effect hypothesis.

For the Pakistan economy, no certain evidence is available which comprehensively explores the relationship between FDI and SD. The available evidence is either limited or just focuses on different components of SD only. Trends, determinants, and analysis of FDI related to the Pakistan economy were discussed by Shaheen (2001), Akhtar (2000) and MuqadasUllah and Ayaz (2015). It was recognized that if Pakistan's economy wanted to gain fruits of FDI then attention would have been focused on indigenous factors. Suleman (2009), Iqbal et al. (2014), Le and Attaullah (2002), Zaman et al. (2012), Raza et al. (2012) and Najia et al. (2013) covered macroeconomic indicators of Pakistan within the ambit of FDI for closed economic issues only. Overall these studies reached the same conclusion that the impact of FDI on performance of Pakistan's economy would not be proved beneficial unless the improvement in indigenous investment, human capital formation, entrepreneurship along with socio-economic institutional and cultural setups. Performance-related to FDI and open economic issues of Pakistan economy were captured by Hafeez-ur-Rehman et al. (2010) and Aleemi et al. (2015). The studies observed positive impact of FDI on real exchange

rate and export promotion of Pakistan economy.In the light of limited available evidence on FDI for SD in Pakistan, this study specifically contributes to the literature by putting evidence on the topic.

3. DATA AND METHODOLOGY

Several measures have been used for capturing SD that is Living Planning Index (LPI), Ecological Footprint (EF), City Development Index (CDI), Human Development Index (HDI), Genuine Saving Index (GSI), and Environmental Adjusted Domestic Product et cetera. These indices along with other renowned indices are failed on scientific grounds to make policy recommendations (Bohringer and Jochem, 2007). Hardi and Juanita (2000) also stressed the need for a comprehensive measure of sustainability that could be quantifiable and verifiable. This study not only attempts to construct a comprehensive measure of SD but also decomposes the measure into economic, social and environmental components so that a broader picture of the analysis could be captured. For this purpose, time-series data related to the Pakistan economy from 1980-2016 is utilized.

3.1 SDI AND DECOMPOSITION

For measuring SD, this study follows the UN (2014) which harmonizes recent approaches of measuring SD. The measure incorporates not only the development for the generation of the day but also takes care of the development based on a temporal and spatial basis. Based on pragmatic approach thirteen different indicators of wellbeing are selected. A large and a small set of indicators are suggested but data limitations restraint this study to choose the small set. In line with the definition introduced by Brundtland Report (1987) the indicators encircle economic, social and environmental aspects of the economy as explained in Table:1.

For constructing the index equal weightage is assigned to each indicator. First of all, the data is normalized. The values of environmental components of SD are taken as negative because environmental degradation affects development adversely. The index is developed by averaging the normalized values. The index lies between -0.23 to 0.77. The value of less than zero indicates that adverse effects of environmental degradation outweigh the positive effects of socio-economic development. The graph of index is shown in Fig: 1. The SDI shows a moderate value from 0.33 to 0.39, hence showing slight upward trend. However, the index is observed to be declined up to 2004 and afterward, there is a sharp recovery.

3.2 MODELING THE VARIABLES OF INTEREST

The study exploits four models. Firstly, in the prime model role of FDI is explored for SD in Pakistan and then SD is decomposed into its three core components i.e. social, economic and environmental for exploring the role of FDI comprehensively. The variables used in this study are mentioned in Table: 3. All the variables except SDI, infrastructural index and social infrastructural indexes, are renowned macroeconomic variables and are self-explanatory, however, the indexes computed in this study need elaboration. SDI has earlier been explained and now the other two indices are elaborated. Four main components of infrastructure are considered for construction of index and for each component multiple macroeconomic variables are used for measurement as explained in Table: 2.The infrastructural and social infrastructural indices are worked out with the help of principal component analysis. All the variables mentioned in Table: 2, are used in computation of infrastructural index (INFI) while variables related only to the components of

education and health are utilized for construction of social infrastructural index (SINFI).

Table: 1: Measurement of Sustainable Development Index

Components	Indicator Name	Measurement	Min	Max
Economic	GDP Growth	Growth Rate	0	1
	Employment to Population Ratio	Age:15+, Total (%)	0	1
	Gross Capital Formation	% of GDP	0	1
	Gross National Expenditure	% of GDP	0	1
	Energy Use	Kg of Oil Equivalent Per Capita	0	1
Social	Life Expectancy at Birth	Years	0	1
	Government Expenditure on Education	% of GDP	0	1
	Final Consumption Expenditure	% of GDP	0	1
	Merchandise Imports from Low- & Middle-Income Economies	% of Total Merchandise Imports	0	1
	Net official Development Assistance and Official Aid Received	Constant of 2013 US$	0	1
Environmental	Fossil Fuel Energy Consumption	% of Total	-1	0
	Other Greenhouse Gas Emissions	Thousand Metric Tons of CO2 Equivalent	-1	0
	Total Greenhouse Gas Emissions	Kt of CO2 Equivalent	-1	0
INDEX	SDI		-0.23	0.77

Prepared by: Authors; Data Source: WDI

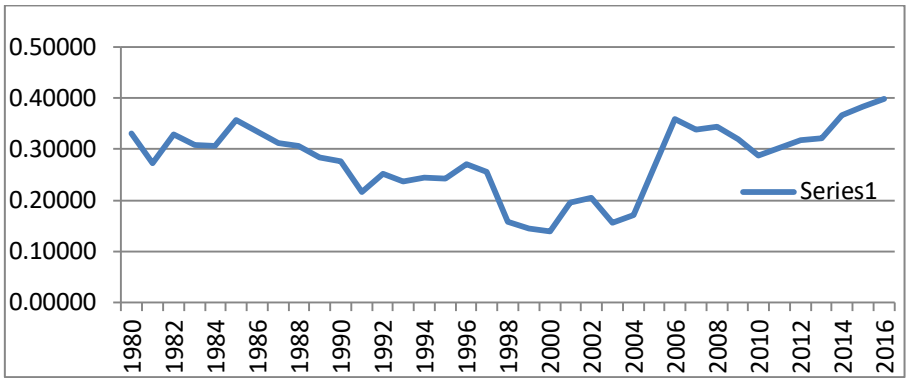

Figure 1: Sustainable Development Index in Pakistan (Source: Based on Authors' Calculations)

Table 2: Construction of infrastructural and social infrastructural index

Components	Variable and Measurement							
Education	Number of Primary Schools (000 No)	Number of Middle Schools (000 No)	Number of High Schools (000 No)	Number of Vocational Centers	Number of Universities	-	-	-
Health	Number of Hospitals	Number of Dispensaries	Number of BHUs	Number of Maternity and Child Health Centers	Number of RHC	Number of TB Centers	-	-
Transport and Communication	Length of Roads (KM)	Cargo Handled (000 tons)	Number of Locomotives	Number of Freight Wagons	Number of Vessels	PIA Fleet in Number	Number of Post Offices	Number of Telephones (000 Nos)
Energy	Local Crude Oil Extraction (000 US Barrels)	Petroleum Production (000 Tones)	Gas (Million Cubic Feet)	Coal Production (Local: 000 Tones)	Electricity Installed Capacity (Mega Watt)	-	-	-

3.3 COINTEGRATION ANALYSIS

The generalized equation used in ARDL analysis is explained as

$$\Delta \ln(Y)_t = \alpha_0 + \sum \sum_{i=1}^{p} \alpha_i \Delta ln(X_i)_{t-1} + \sum \gamma_i \ln(X_i)_{t-1} + v_i \quad (1).$$

In equation [1], Y shows a dependent variable, X shows an independent variable, α_i represents the short-run dynamics of the model while parameters γ_i represent a long-run relationship. The subscripts i and t represent the number of variables and year of observation respectively. The error term is shown by v_t. The null hypothesis is

H_0: $\gamma_1 = \gamma_2 = \gamma_3 = \gamma_4 \ldots\ldots = 0$,and

H_1: $\gamma_1 \neq \gamma_2 \neq \gamma_3 \neq \gamma_4 \ldots\ldots \neq 0$ {alternative hypothesis}

Table 3: ADF unit root test.

Variable	Description	Model	Level	First Difference	Integration Order
SD	Sustainable Development	No intercept, no trend	-0.0441	-5.598*	I(1)
ECSD	Economic Component of SD	No intercept, no trend	0.0074	-5.967*	I(1)
SCSD	Social Component of SD	No intercept, no trend	0.9764	-5.212*	I(1)
ENCSD	Environmental Component of SD	Intercept and trend	-4.3491*	-	I(0)
FDI	Foreign Direct Investment	No intercept, no trend	-1.5959	-4.016*	I(1)
LFPR	Labour Force Participation Rate	No intercept, no trend	1.4129	-5.539*	I(1)
OPEN	Openness	Intercept with trend	-4.1801*	-	I(0)
INF	Inflation	No intercept, no trend	-1.4387	-7.281*	I(1)
GFCF	Gross Fixed Capital Formation	No intercept, no trend	-0.7941	-5.333*	I(1)
HDI	Human Development Index	Intercept, no trend	-0.1328	-5.942*	I(1)
AVA	Agricultural Value Added	No intercept, no trend	-0.9706	-5.752*	I(1)
IVA	Industrial Value Added	No intercept, no trend	-0.6846	0.651*	I(1)
INFI	Infrastructural Index	Intercept with trend	-1.7890	-6.052*	I(1)
SINFI	Social Infrastructural Index	Intercept, no trend	-2.7448***	-3.933*	I(1)
REMIT	Remittances	No intercept, no trend	-0.9070	-5.783*	I(1)
GDP	Gross Domestic Product Growth	Intercept, no trend	-3.851*	-	I(0)
URB	Urbanization	No intercept, no trend	-2.611*	-	I(0)

Source: Authors' Calculations
Data Source: WDI and Economic Surveys of Pakistan

The rejection of H0 will confirm the existence of conitegration. In case that cointegration exists, the analysis moves to the second step to find out a long-run relationship by estimating

$$\ln(Y)_t = \alpha_0 + \sum \sum_{i=1}^{p} \gamma_i \, ln(X_i)_{t-1} + u_t \quad (2).$$

After having found a long-run relationship, the analysis moves to the third step where the estimation of ECM shows time of adjustment for correcting disequilibrium in short run to regain equilibrium in the long run. ECM model is a category of multiple time series models that directly estimates the speeds at which a dependent variable returns to equilibrium after a change in an independent variable. The cointegration analysis has the force to deal with long-run properties only and has no exclusive concern with a short-run mechanism. ECM modeling equation for short-run behavior is given as

$$\ln(Y)_t = \alpha_0 + \sum \sum_{i=1}^{p} \alpha_i \Delta \, ln(X_i)_{t-1} + u_t \quad (3).$$

4. RESULTS AND DISCUSSION

Results regarding stationarities under the Augmented Dickey-Fuller test are mentioned in Table: 3. It comes to the surface that except the environmental component of SD all the dependent

variables are observed to be stationary at first difference. Obvious finding out of stationarities is that all the models in this study except the model of the environmental component of SD are suitable for Johansen Cointegration and for environmental model ARDL is utilized.

4.1 JOHANSEN TEST OF COINTEGRATION

This part devotes to the Johansen Test of cointegration for sustainable development along with economic and social components of sustainable development.

Table 4: LAG order selection criteria.

Model	Lag Order	LogL	LR	FPE	AIC	SC	HQ
SD	1	94.708	NA	0.000*	-2.612*	-0.434*	-1.860*
ECSD	1	45.064	271.037*	0.000*	0.625	3.113*	1.484*
SCSD	1	-19.505	250.099	0.000	2.829	4.162*	3.289

LR: Sequential Modified LR Test, FPE: Final Prediction Error, AIC: Akaike Information Criterion, SC: Schwarz Information Criterion, HQ: Hannan-Quinn Information Criterion

* indicates lag order selected by the criterion

Source: Authors' Calculations

Table 5: Unrestricted cointegration rank test (trace/maximum Eigen-value)

Hypothesized No. of CE(s)	SD Model		ECSD Model		SCSD Model	
	Trace Statistic	Max-Eigen Statistics	Trace Statistic	Max-Eigen Statistics	Trace Statistic	Max-Eigen Statistics
None	178.191*	50.730*	154.279*	48.031*	114.252*	48.849*
At most 1	127.461*	43.925*	106.248*	32.051	65.403*	32.965*
At most 2	83.536*	30.652	74.197	24.100	32.437	20.476
At most 3	52.883	22.737	50.097	21.617	11.961	10.608
At most 4	30.147	15.441	28.480	14.038	1.354	1.354
At most 5	14.706	7.887	14.442	8.655	-	-
At most 6	6.819	6.819	5.786	5.786	-	-

* denotes rejection of the hypothesis at the 0.05 level which indicates cointegration

Source: Authors' Calculations

It is an obvious fact in Table 4 that lag order is selected as "1" for all the models using Johansen methodology. In Table 5, two criteria of Johansen methodology are mentioned for exploring the cointegration among the variables of three different models. In the case of the SD model, it is found out that there exist three cointegrating equations based on Trace Statistics while two cointegrating equations in case of Eigen-Value Statistics imply cointegration. Similarly, cointegrations among the variables related to the models of economic component of SD and social components of SD are also observed to exist.

Table 6: Vector error correction model.

Model	Coefficient of Cointegrating Equation	Standard Deviation	t-Statistics
SD	-0.213	0.089	-2.381
ECSD	-0.044	0.024	-1.850
SCSD	-0.608	0.239	-2.544

Source: Authors' Calculations

Along with long-run relationship short-run analysis is also necessary to assess equilibrium in the model. Table 6 presents the results for the vector error correction mechanism. All three models in Table: 6 are shown to be fit because negative signs of coefficients specify that models are converging towards equilibrium. However, coefficients in models for SD and social components of SD are apparently significant at a 5 percent level whereas that for model of economic component is statistically significant at 10 percent level. Traditionally statistical significance is moderately best up to 5 percent level however a ten percent significance level could also be accepted in some cases

because as the significance level is increased the chance for error in experimentation is increased. In this scenario on statistical ground the models of SD and social components of SD are established to be comparatively better than the model of economic component of SD.

In Table 7, serial correlation and heteroskedasticity tests are applied to the model and results show that hypotheses of serial correlation and heteroskedasticity are rejected. The analysis is consistent and trustworthy.

Cointegration analysis and vector error correction analyses portray a strong relationship among the variables of the models which are converging to the equilibrium in the short run. Yet it is not sufficient to capture the marginal effect of a change in the independent variable. However, vector autoregressive modeling is able to provide response of shocks among the variables of the model by impulse response function. The responses of dependent variables against shocks in FDI in the models are discussed in the following with the help of diagrams.

Table 7: Residual diagnostic tests for VAR modeling.

Test	Lag	Test Statistics	Probability
SD Model			
VEC Residual Serial Correlation LM Tests	1	31.764	0.973
	2	31.506	0.975
VEC Residual Heteroskedasticity Test	Joint Test	494.657	0.608
ECSD Model			
VEC Residual Serial Correlation LM Tests	1	45.987	0.596
	2	50.586	0.411
VEC Residual Heteroskedasticity Test	Joint Test	461.462	0.320
SCSD Model			
VEC Residual Serial Correlation LM Tests	1	35.832	0.074
	2	29.495	0.244
VEC Residual Heteroskedasticity Test	Joint Test	225.981	0.214

Source: Authors' Calculations

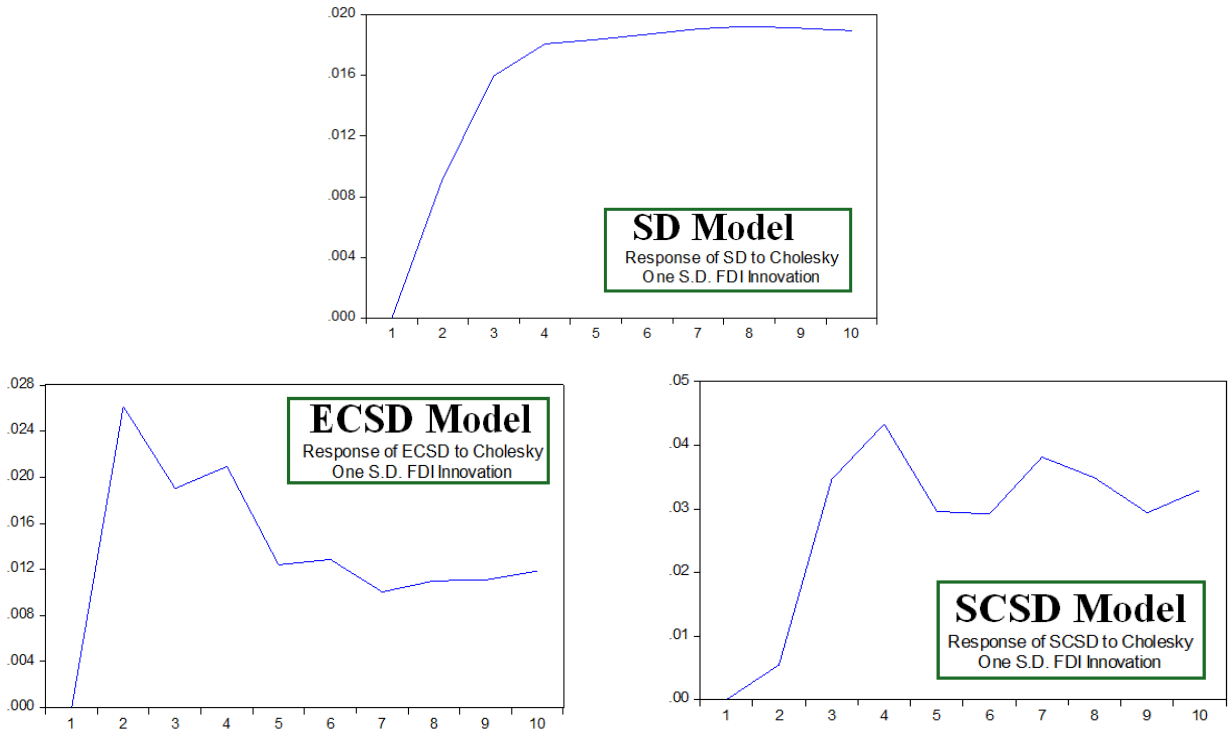

Figure 2: Impulse Response Function.

Firstly, the model of SD in Figure 2 response against shock in FDI over a period of ten years could be observed. The responses of SD remain positive throughout along with an early increase which then followed by a smooth behavior. This suggests a positive relationship which converges

to smoothness after a sharp increase.

Secondly, for an economic component of SD, it could be noticed that response is also positive throughout but with diminishing behavior. It increases initially at a fast pace which then followed by a diminishing pace and there is no negative response. Thirdly, the social component of the SD response initially increases and then is converted into business cycles instead of smoothness.

4.2 ARDL TEST OF COINTEGRATION IN CASE OF ENVIRONMENTAL COMPONENT OF SD

The model for environmental component of the SD bound testing approach is exploited. Table: 8 depicts that F-statistics is greater than both the upper and lower bounds which confirm cointegration. Long-run and short-run results are discussed in Tables: 9 & 10.

Table 8: Bound Tests for Cointegration.

F-Statistics	4.668	
Critical Value Bounds		
Significance Level	Lower Bound	Upper Bound
10%	2.03	3.13
5%	2.32	3.5
2.5%	2.6	3.84
1%	2.96	4.26

Source: Authors' Calculations

Results in Table 9 show that as per expectation FDI has a negative relationship with the environmental component of SD which is significant marginally at a 10 percent level. The Kuznets Curve hypothesis is even confirmed but not statistically proved. Openness and urbanization, are also significant in line with theory whereas industrial value addition and agricultural value addition have not proved to be significant on statistical grounds. The results pursue the evaluations of Pazienza et al. (2011), Zhen et al. (2014) and Kardos (2014). The study also confirms popular theoretical aspects of FDI for environmental degradation in the case of developing countries where there is chance that FDI may not be utilized prudently.

The results about cointegration equation are shown in Table: 10 wherein statistically significant negative sign is enough to believe that with the passage of time the model is moving towards equilibrium. The observed speed of convergence is shown to be relatively high which also conforms to the literature survey wherein some studies also believe the relationship between FDI and environmental degradation is contingent upon some certain other factors (Narula and Dunning, 2000; Franc, 2015; Kardos, 2014). In this regard, it is assessed that if the analysis is conducted under certain restrictions then such a high speed is not expected. Under the potential limitations and objectives of the study, such analysis is beyond the scope.

Table 9: long-run coefficients of the environmental component of sustainable development

Variable	Coefficient	Std. Error	t-Statistic	Probability
FDI	-0.046	0.026	-1.789	0.093
GDP	0.029	0.047	0.619	0.545
GDPS	-0.006	0.005	-1.259	0.226
OPEN	1.118	0.554	2.017	0.061
URB	-0.123	0.033	-3.732	0.002
IVA	0.004	0.017	0.247	0.808
AVA	-0.017	0.014	-1.243	0.232
C	2.841	1.152	2.466	0.025

Source: Authors' Calculations

In diagnostic tests mentioned in Table:11 analysis is found to be precise and reliable because no evidence of serial correlation or heteroscedasticity is observed.

Table: 10: Short-run coefficients of the environmental component of sustainable development

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ENCSD(-1))	0.388	0.185	2.102	0.052
D(FDI)	-0.021	0.036	-0.571	0.576
D(FDI(-1))	0.048	0.033	1.449	0.167
D(GDP)	-0.017	0.032	-0.541	0.596
D(GDP(-1))	0.013	0.009	1.474	0.160
D(GDPS)	0.001	0.003	0.183	0.857
D(OPEN)	0.581	0.629	0.924	0.369
D(URB)	1.286	1.773	0.725	0.479
D(URB(-1))	1.856	1.106	1.678	0.113
D(IVA)	-0.010	0.013	-0.740	0.470
D(AVA)	-0.019	0.015	-1.253	0.228
CointEq(-1)	-1.122	0.215	-5.217	0.000

Source: Authors' Calculations

Table 11: residual diagnostic tests for ARDL modeling.

Test	Test Statistics	Probability
Breusch-Godfrey Serial Correlation LM Test	0.955	0.408
Heteroskedasticity Test: Breusch-Pagan-Godfrey	2.002	0.084

Source: Authors' Calculations

5. CONCLUSION

Overall SD in Pakistan is found to be at a moderate level with respect to the defined values of the SDI constructed in this study (-0.23 to 0.77). With the measured SDI the only available information is in an absolute sense for Pakistan economy and not in a relative sense under a global perspective because index only measures information for Pakistan. Therefore, the moderate level of SD in Pakistan is concluded under bounded rationality. Along with this no remarkable change in SD is witnessed in Pakistan over the last about thirty-six years. On the whole even a nominal increase is evident in SD but the performance is volatile because it decreases till 2004 and then increases sharply till 2016. With this perspective this study concludes that SD in Pakistan is not impressive on account of volatile and stagnant performance.

The relevance of FDI with SD in Pakistan is evaluated in this study while using a time series framework and disaggregating data for SD among economic, social and environmental components. Firstly, analysis for mingled data related to SD emphasizes that the relevance of FDI with SD is slightly optimistic because a long-run relationship is established which is converging towards equilibrium in the short run and showing a positive impulse response in SD against deviations in FDI. Therefore, in the case of the Pakistan economy, it is concluded that FDI has a positive relevance with SD. In case of the economic, social and environmental components of the SD the same phenomenon is observed for the relevance of FDI with SD which strengthens the argument of this study that FDI in Pakistan not only able to enhance the SD but also affects all its three components conventionally. This study also discovers that relevance of economic component of SD with FDI is even positive in Pakistan but showing a diminishing behavior. Similarly, social component of SD is observed to be a volatile behavior while environmental component of SD is not strongly significant at statistical grounds.

It is also evident in the Pakistan economy that public policy focus towards sustainability also

starts in the earlier decade of twentieth century. A paradigm shift in sustainable development policies of Pakistan i.e. population control measures, human resource development strategies, trade deficit focus, preservation of natural resources, etc., is also observed in the early decade. Enlarged efforts for empowerment, increased swing towards devolution of power, focused decentralization, enhanced participation of NGOs, proliferation of CNG stations, implementation of public-private partnerships in education and health sectors were the core public sector policies in the earlier decade which focused sustainable development. Therefore, it could be concluded in this study that relationship of FDI with SD is proved to be positive in Pakistan however, in absence of pro-sustainable public policies the effects of FDI on SD are canceled out. Obvious evidence for this conclusion is the downtrend in SDI before 2004 and thereafter apparent upward trend is observed. Along with this the upward trend in SDI is not strong one which points out that sustainable public policies in Pakistan are not so efficient that could help to achieve full potential of FDI for SD. This study discovers that pro-sustainable public policies belong to the set of prudent utilization factors of FDI.

5.1 CONTRIBUTIONS OF THE STUDY

The contributions of this study could be established in two main dimensions. First of all, not only that sustainable development is constructed here and a trend of 36 years is brought to surface which highlighted that that sustainable development is even positive but not impressive. This finding is in line with the evidence available in the literature survey that developing countries must face some certain social and economic impediments for realization in the benefits of FDI. Secondly, this study points out that pro-sustainable public policies are one of solutions to bottleneck of social and economic impediments in the way of FDI based sustainable development.

6. AVAILABILITY OF DATA AND MATERIAL

Data can be made available by contacting the corresponding author.

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