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IMPACT OF FOREIGN DIRECT INVESTMENT ON EXPORT OF PRIMARY SECTOR: EVIDENCE FROM PAKISTAN

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ABSTRACT

The paper aims to determine the impact of foreign direct investment (FDI) on exports of the primary sector of Pakistan. Time series annual data sets from 1980-2015are taken from the World Bank (WDI) and Economic Survey of Pakistan. Stationarity of series has been tested through Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) tests. ARDL model has been applied to determine the long-run association among the variables. The study concludes that foreign direct investment significantly determines the export of primary commodities. It is suggested that policies could be made to attract FDI in the primary sector.

Keywords: *ARDL, FDI, Exports, Real exchange rate, GDP*

INTRODUCTION

The importance of foreign direct investment (FDI) in less developed economies have extensively been debated in international literature. Foreign direct investment (FDI) promotes growth through advancing in technologies, create employment opportunities and integrate the host country with the global economy. On the other hand, it creates a balance of payments problems in the host country. Foreign direct investment affects exports from the country of origin in two different ways. First, the possibility of substitution if FDI enters the market of a country of origin where the national investor produces those goods, exports can be alternatives and FDI is defined as horizontal. However, if the FDI arrives in a host country to obtain a large

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part of the local market and sell the product locally instead of exporting the goods in other foreign markets (Haddad, 1993; Ruggiero, 1996; Sun, 2001; Yilmaz, 2008). Such FDI depresses domestic investors. So, domestic firms exporting activities get negatively affected by foreign firms export activities, further, it becomes an obstacle for non-exporter local firms in becoming exporters (Mondal & Pant, 2020). Although the contribution of exports to the world market has increased due to FDI, so it is defined as a complementary factor for exports. Such FDI's are known as vertical investments that's why it has a direct and positive impact on exports. Investors bring their investments to the host country to reduce production costs and take advantage of the scarce resources of the host country where it has a comparative advantage. These FDIs contribute to promoting exports from recipient countries. The exporting capability, new job creation, better options of domestic investments (Kamal et al., 2019), getting familiar with new technology, converting this familiarity into economic growth of beneficiary country increases due to FDI (Hussain & Ansari, 2020). So, how the export will be impacted by the FDI depends on nature and the purpose with which the entry is being made. If the purpose is to just enter and become a part of the local market then the export might decrease but having a motive of getting the benefit of comparative advantage may lead towards an increase in exports (Musti, 2020)

In less developed economies, shifting to machinery from the existence of less-skilled workers does not seem to be an easy task. In such situations, attracting the FDI will decline the exports performance level of the beneficiary. It also damages the performance of domestic exporters. Devious efforts of the host country to channelize its comparative advantage will produce an opposite impact of FDI on the beneficiary country's exports (Zhang, 2009). Mundell (1957) and Svensson (1996) have shown that the exports are negatively impacted by FDI whereas (Helpman, 1984; Grossman, 1989; Lipsey, 1981) gave a positive conclusion on global trade. The difference in the opinion of economists in the developing world has created new and dynamic forms of research due to the mysterious and contradictory nature of the prevailing economic concepts and empirical evidence. So, it confuses the reader about the impact of direct foreign investment on exports, whether negative or positive.

Fig. 1: Foreign Direct Investments (FDI) and Exports of Pakistani primary goods (XP)

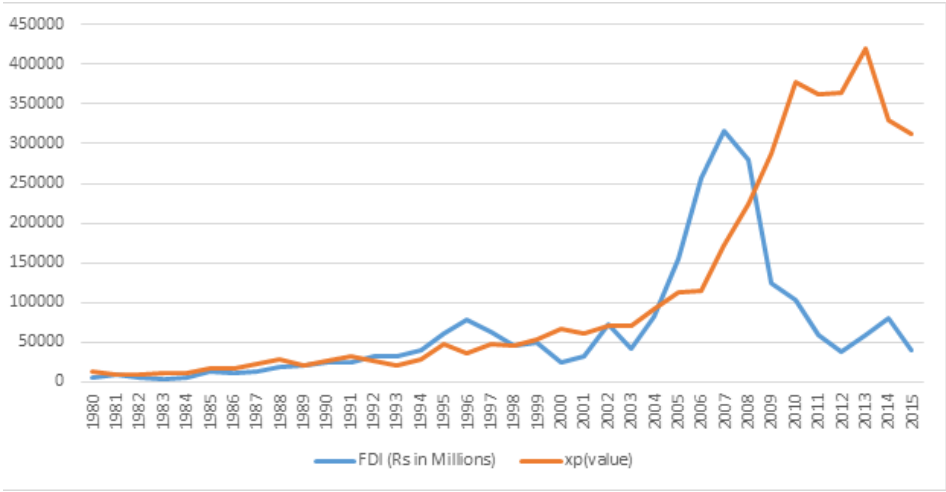

Fig. 1 shows that from 1980 till 1988 both FDI and exports are growing at different rates. In 1988-89, exports are falling while FDI is showing a regular upside movement. During 1993-1995, both FDI and exports are moving up. In 1996, exports show downward movement but gradually went up during 1997-2000, but FDI is showing a declining trend from 1996 to 2000. In 2003-2007, FDI goes up significantly but after 2007 till 2012 it comes down drastically. Exports increase regularly but during 2006-2013 it comes up considerably.

There has been an increasing debate among economists in developing countries about the impact of foreign direct investment on exports of recipient countries. One of the main concerns in this debate is whether FDI spurs export activity in countries that receive FDI. Countries that receive FDI have an advantage over their competitors in terms of low cost and high skill in the world market (Cabral, 1995; Leichenko, 1997; Zhang, 2009). On the contrary, FDI is discouraged when it replaces domestic investment. So, it needs to be deeper down examined that whether the FDI encourage or discourage the domestic investments in FDI receiving countries (Shah & Hasnat, 2020). The graph above does not exactly reveal a clear picture of the relationship between FDI and exports performance of Pakistani primary goods but provides a slight idea about the trends in the same direction which is a basic signal of long-run relationship. Further, less number of literature exists in the context of Pakistan which have covered especially the export performance of the primary sector so more investigations are needed to explore it. Therefore, this study tries to fill this gap by examining this relationship of foreign direct investment (FDI) and export performance in the primary commodities sector of Pakistan. Results of this research will help to formulate the policies that could be the core step towards attracting the FDI in the primary sector to achieve sustained economic growth.

In the next section, the study covers the literature of previous studies to provide theoretical and empirical support for this research. Further, the next parts are methodology, data analysis and conclusion, which will be discussed one by one.

Literature Review

The theoretical underpinning for the study is centered on the Heckscher-Ohlin(H-O) Model, endogenous growth theories and new trade (Liu and Shu, 2003). H-O model claims that a nation will use the factors which the nation has abundant in supply to export the products. According to the new trade theory, the important factors to determine exports performance are the imperfect competition, economies of scale, product differentiation and trade cost (Krugman,1983). With the increased globalization, Markusen and Venables (1998) used FDI into their general equilibrium trade models. Endogenous growth theory emphasized that technology and innovation play an important role to determine exports performance.

Many studies are available that have evaluated the performance of the aggregate export impacted due to the change in foreign direct investment. Kojima (1985) analyzed four ASEAN countries (Thailand, Philippine, Malaysia and Indonesia) and four newly industrialized countries (Taiwan, Hong Kong, Korea and Singapore) to reveal an impact on FDI of Japan and USA. Japan was higher to have trade-related investment whereas the FDI of the USA was in opposite conditions. Chou (1988) reconsidered Kojima (1985) study on Taiwan economy and declared that Japan and USA's FDI to Taiwan remained significant and positive on the exports of Taiwan.

Leichenko (1997) inspected the association between FDI and export performance by examining twelve years of data (1980 to 1991) for different states of the USA. They inferred a positive relation of FDI with the industrial performance of exports. Hejazi (2011) studied association among FDI and international trade of the United States of America (USA) and 51 other countries. They used the gravity model, took the data span from 1982-1994. Results reported a significant but positive association of FDI with USA exports' performance. Liu (2002) concluded a bi-directional causal association among FDI and exports of China. They used the quarterly data of 17 years (1981-1997) of both FDI and exports for the analysis.

Sharma (2003) inspected to display the impact of FDI on Indian exports for the period of 1970-1988. Results confirmed that FDI does not have any significant influence on Indian export's performance which is opposite to the results of Prasanna (2010). On the other hands, O'Sullivan (1993) and Blake (1994) examined the Ireland and UK economies, respectively. Both studies have shown that the FDI and local exports of the country are complementary. Different cross-country studies have

mentioned that FDI impacts the domestic exports of a country, varied by both industry and region.

Pain (1988) has studied the ten OECD countries and examined whether the FDI effects on export performance, by using a panel data series, Denmark, Japan and Italy dropped their exports performance. Sun (2001) examined for a Chinese economy that by region how crucial is FDI's role in exports, for a period from 1984 to 1997. He showed a significant impact of FDI on the different coastal areas of China compared to the rest of China. Alıcı & Ucal (2003) evaluated the Turkish economy by taking trimestral data for 1987-2002 to show the causal relationship among inward FDI, GDP growth and their exports performance. The results remained insignificant causal relationship.

Ekanayake (2003) studied the USA, Brazil, Mexico, Chile and Canada economies to check the causality among FDI and exports on a data period from 1960 - 2001. The study confirms the existence of bidirectional causality for the USA and unidirectional causality between exports and FDI for Brazil and Mexico while rest remained insignificant. Metwally (2004) uncovered the association between FDI, exports and output growth on Oman, Egypt and Jordan economies on a data set for the period from 1981-2000. The conclusion was a significant impact of FDI on exports of goods and services for the above three economies. Pacheco-Lopez (2005) did the Granger causality test among FDI and export's performance. They concluded to have a bi-directional causal relationship among them.

Vuksic (2005) checked the same effect on the Republic of Croatia by taking a panel data of twenty-one industrial sectors from 1996-2000 indicated an affirmative and meaningful impact of FDI on the performance of exports by fixed-effect model. Yousuf (2008) evaluated the impact of FDI on international trade for Pakistan. He took annual data of 32 years (1973 to 2004). Johanson Johanson co-integration technique and ECM models have been used for econometric analysis. The results indicate a positive, significant and long-run relationship of FDI on exports whereas in the short-run increase in FDI has a decreasing effect on exports. According to Majeed(2007), FDI revealed a significantly positive impact on exports performance of a mix of forty-nine advanced and less developed countries. The data was used for 15 years and applied the fixed-effect model for 3-SLS method. They suggested for emerging economies to invite FDI by removing the barriers and relaxing the regulations on exports. Export performance is significantly and positively impacted by FDI in different countries (Blake, 1994; Colm, 1988; Davaco, 2014; Jiang, 2013; Ozawa, 1992; Pine, 1988; Shahbaz, 2012; Sun, 2001).

Nourzad (2008) evaluated the significance of FDI in determining the efficiency of the economy by taking annual data from 1981-2001.The findings show that the positive relationship of FDI with potential GDP in both advanced and emerging economies by applying the stochastic production frontier along with regression analysis. Hailu (2010) explored the linkage between FDI and international trade for 16 African countries with the help of twenty-seven years' yearly data from 1980-2007. Results indicated a positive but momentous effect of FDI on international trade. Further, it is recommended that FDI is an extremely helpful tool for expansion of exports in these countries. Kiran (2010) also examined the causality link of same for the Turkish economy by taking three-monthly data set from 1992-2008. The outcome confirms no causality exists among the two variables FDI and international trade.

Ahmadi & Ghanbarzadeh, (2011) and Attari, Kamal, & Attaria (2011) studied sixteen MENA and Pakistani economies, respectively. Both studies have established a conclusion that bi-directional causal relationship between FDI and exports. Chansomphou and Ichihashi (2011) reviewed the impact of FDI on Lao Peoples Democratic Republic's exports performance for a time from 1981 to 2008. The results summarized as the confirmation of strong long-run significant and positive association among the FDI and exports. As per Tabassum (2012) evaluation about the association among FDI and exports for Pakistan during 1973 to 2009 based on co-integration and error correction mechanism (ECM) technique, it is confirmed that there exists an insignificant association between FDI and export performance in both long-run and short-run. Jawaid etal (2016) checked the impact of FDI on Pakistani export performance. They used annual data of thirty-nine (39) years from 1974 to 2012 and performed the robust ARDL model to do the econometric analysis. The results revealed a useful long-run relationship between the variables. It confirms a significant long-run and short-run impact of FDI on exports. Granger causality test, Toda and Yamamoto Modified Wald causality, and Variance Decomposition test have been used to examine the causality among the variables. The results exactly confirmed the existence of a bi-directional causal association between FDI and export's performance.

Sanghita and Mondal (2020) tested the export spillover effect due to FDI on the manufacturing firms of India from 1994 to 2010. They concluded that the firm's export performance is significantly impacted by the insertion and usage of those information, knowledge and new technology which are brought by the multinational firms. Hussain, Ansari, and Khan (2020) concluded in their study that there exists a co-integration (significantly positive long run) among the variables GDP, FDI and exports of both goods and services of India which confirms a significantly positive relationship among these variables in the long-run. Musti (2020) evaluated the influence of FDI on Nigerian export's performance for the period of 1970 to 2018. They

concluded an insignificant direct impact of FDI on exports but in parallel, the economy is in its growing state. This might be due to the growth of the other factors are heading in the right direction and boosting the economy even the foreign investments are not triggering the exports.

According to Shah et al. (2020), the contribution of FDI to Pakistani exports declined but at the same time, this contribution to Pakistani imports has significantly moved up due to increase in terrorism in past years which is increasing country's trade deficit. Sohail (2020) inferred in their study that both FDI and exports are vital factors in the economic growth of Pakistan. Each one has a significantly increasing impact on the economy because FDI is one of the important features which triggers the exports as well, so at the end, it may lead towards the overall growth of the economy. Shah et al. (2020) studied the impact of sectoral FDI on domestic investments over the time frame of 1980-2012 by using the ARDL model. They concluded that FDI does impact the domestic investments but does not remain fixed across the sectors, it varies. They further inferred that FDI for manufacturing and services sectors have significant while FDI for the primary sector has no significant influence on the Pakistani domestic investment.

RESEARCH METHODOLOGY

The study aims to determine the impact of foreign direct investment (FDI) on the export of primary sector of Pakistan. Annual time-series data have been collected from 1980 to 2015, from the reliable sources like World Development Indicator (WDI) and several reports of Economic Survey of Pakistan. The dependent variable is Export (XP) of the primary sector whereas real exchange rate (RER), foreign direct investment (FDI) and GDP are independent variables. The study uses the Autoregressive Distributed Lag (ARDL) technique for estimation. This technique has many advantages. Firstly, this procedure is useful irrespective of their series integration levelI (0) or I(1) partial integrated (Pesaran & Pesaran, 1997; Bahmani-Oskooee, 2002). Secondly, It takes adequate lags to capture the data generating process in a general to specific modelling framework (Laurenceson, 2003). Lastly, it helps to originate dynamic ECM through a linear transformation without dropping information about long-run elasticities (Banerjee et al., 1993).

The basic econometric model is

$$\mathbf{LREXP_{tP} = \alpha_{0+} \alpha_1 LRFDI_t + \alpha_2 RGDP_{t+} \alpha_3 RER_t + e_t}$$

$LREXP_{tP}$ = Log of Real Exports of the primary sector of Pakistan at time t.

$LRFDI_t$ = Log of Real Foreign direct investment of Pakistan at time t.

$RGDP_t$= Real Gross domestic product of Pakistan at time t.

RER_t= Real exchange rate of Pakistan at time t.

e_t = Error term of the model at time t.

Table 1: Summary of Definitions and Sources of Variables

Variable	Description	Construction	Citation	Data Source
Export of Primary Sector (RXP)	Inflation-adjusted export of goods of the primary sector. (in millions of Rs.)	LRXP = Log(RXP)	(Yasir Khan, 2019)	Economic Survey of Pakistan
Real Foreign Direct Investment (RFDI)	"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". (in millions of USD)	LRFDI = Log(RFDI)	(Khalid Zaman, 2012)	WDI
Gross Domestic Product (RGDP)	"Inflation-adjusted value of all goods and services produced by an economy in a year". (in millions of Rs., Base year = 2010)	LRGDP = Log(RGDP)	(Simplice A. Asongu, 2020)	WDI
Real Exchange Rate (RER)	Inflation-adjusted exchange rate. (in PKR/USD, Base year = 2010)	RER	(SAMI ULLAH, 2012)	SBP

EMPIRICAL RESULTS

In the current study, we are using time series analysis. The fundamental principle in time series analysis is that all variable should be stationary. For checking stationarity of variables, we use Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) tests (Phillips & Perron, 1988). ADF has the null hypothesis that the series has unit root (non-stationary) while the alternative hypothesis is the series does not have unit root (stationary). RER is stationary at I(0) (means at level) while GDP, FDI and Ex-

ports are stationary at I(1) (means at first difference) in both ADF and Phillip-Perron tests.

Table 2: Stationarity Testing Result Summary

	ADF		**PP**	
	Level	**1st Diff.**	**Level**	**1st Diff.**
LRXP		-7.415482*		-7.451154*
LRFDI		-4.917096*		-4.948426*
LRGDP		-6.145682*		-6.141880*
RER	-2.0006206**		1.824201***	

* Significantat 1%, ** Significant at 5%, *** Significantat 10%.

Cointegration Results

Table 3: ARDL Bounds Test(LRXP)

F-Statistics	99% LB[a]	99% UB[b]	95% LB	95% UB	90% LB	90% UB
8.110666	4.29	5.61	3.23	4.35	2.72	3.77

a: LB stands for Lower Bound, b: UB stands for Upper Bound.

After getting confirmed about the rejection of the existence of unit roots means variables are stationary, we move towards checking of the long-run relationship among the variables. To achieve the objective, the ARDL model has been applied as the order of integration is different for all the variables. The ARDL Bound test result is displayed in Table 3. To decide the presence of a long-run relationship among the variables, F-statistic value is compared with the 95%UB value at the set significance level of 5%. According to a rule of thumb if the F-statistic value is higher than the UB value then there exists a long-run relationship among the defined variables. In the current scenario, the F-statistic value (8.79) is more than the 95% UB value (even at 1% and 10% significance level too) so it confirms the existence of a long-run cointegration between the variables.

Table 4: ECM (Error Correction Mechanism)

Dep. Var.: LRXP

Model Confirmed: ARDL(3, 3, 4, 0)

Variables	Coeff.	t-statistics	Probability
LRXP(-1)	-0.220276	-1.075588	0.2963
LRXP(-2)	-0.399159	-2.532047	0.0209
LRFDI	0.133165	1.742178	0.0985
LRFDI(-1)	-0.061453	-0.569218	0.5762
LRFDI(-2)	-0.194103	-2.472050	0.0236
RER	-0.008050	-1.177150	0.2545
RER(-1)	-0.010246	-1.119515	0.2776
RER(-2)	0.001132	0.144903	0.8864
RER(-3)	-0.009343	-2.096823	0.0504
RGDP	0.000000	2.485030	0.0230
ECM(-1)	-0.795653	-3.832814	0.0012

Table 5: Diagnostics Tests

R^2 0.924449	Serial correlation LM test F value0.092793 prob [0.7644]
Adjusted R^2 0.869885	Hetroscedasticity F value 1.674170 prob [0.1536]
	Normality test J.B Value 0377998 prob[.827787]
DW 2.086451	Ramsey reset Test F Value 0.001210 prob[0.9727]

As the error correction term (ECT) has a negative sign which confirms the long-run relationship among variables. The significance of error correction term coefficient inferring that short-run equilibrium is converging to a steady long-run equilibrium. ECM value systematically indicates the adjustment speed that how quickly the short-run disequilibrium directs towards the long-run equilibrium. The ECM coefficient value is 0.795653which defines that 79 percent changes in short-run equilibrium are adjusted in the current year. Diagnostics tests are also performed. Autocorrelation has

been tested by Breusch-Godfrey (BG) Serial Correlation Lagrangian Multiplier (LM) Test (p-value > 0.05) assures that the Autocorrelation does not exist, the decision about the negation of heteroscedasticity has been finalized by Breusch-Pagan-Godfrey (BPG) test (p-value > 0.05) whereas the normality of data has been checked and confirmed by Jarque-Bera (JB) test (p-value > 0.05).

Table 6: Analysis of Exports of Primary Goods in Long Run

Variables	Coefficients	T-Statistics	Probability
LRFDI	0.446202	3.142588	0.0056
RER	.008636	2.815537	0.0114
LRGDP	0.000000	0.00000	0.0003
C	-0.727550	-0.194277	0.8481

Dependent: LRXP

The outcomes long-run coefficient of cointegration show that the effect of FDI and real exchange rates have positive and significantly determine the export performance of the primary sector. As the elasticity is being indicated by the long-run coefficient of FDI showing that upside movement in FDI by 1% will move the exports of primary goods up by 0.446%.

CONCLUSION

This study examines co-integration among foreign direct investment (FDI) and the performance of exports of primary goods. The results indicate that the FDI effects significantly and positively on the performance of exports of primary commodities. As the error correction term's (ECT) sign is negative, which signals a long-run but stable association among the variables used in the model. The coefficient value of ECT is significantly indicating a healthy convergence of short-term equilibrium towards a long-term equilibrium but a stable one.

As the current study is showing that positive sign of FDI in Pakistan contributes to enhance exports performance in the primary sector and contribute to increasing economic growth that helps to improve employment generation and raising the standard of living. FDI is also helpful to access the world market and transfer of technology. Therefore, it is recommended for the policymakers that policies could be made to attract FDI in primary to stimulate economic growth. If Pakistan wants to attract the FDI, they need to maintain good governance, keeping the macroeconomic factors

steady and developing a politically stable environment. Besides these improvements, infrastructure and spending in human capital will also help to attract FDI in Pakistan. For the future researchers, the current study could be extended in terms of time, by capturing more specific impact of primary subsectors like the GDP contribution of agriculture and mining sectors on export. Further, it can be tested for different regions like SAARC and European regions.

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