# How Trade Openness and Foreign Direct Investment Affect Economy of Pakistan

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**Abstract**

*This study is intended to find out how and to what extent FDI and trade openness affect the growth of economy in Pakistan for time span 1980-2018. To examine influence of FDI and trade openness, GDP was used by way of dependent variable whereas FDI, trade openness, exchange rate, and inflation are also taken as independent variables. The ARDL technique is employed in following study to estimate short-run and long-run results. This study concludes that TO have a positive momentous influence on GDP in both long and short run. While Foreign Direct Investment has an optimistic but irrelevant influence on GDP in Pakistan which demonstrates that TO has a more progressive influence on GDP of Pakistan than FDI. Other variables labor force and inflation harm economic growth while the exchange rate affects GDP positively. It is suggested by the study to enhance economic growth, govt should focus on liberalization of trade by reducing tariffs, customs duties, and other types of taxes on exports to enhance the economic growth of Pakistan.*

**Key-words:** Trade Openness, FDI, Exchange Rate, GDP.

## 1. Introduction

The economic growth of a country shows how well a country is performing to achieve its goal of long-term equilibrium development. There are many factors in any economy that help to speed up the growth process, among many important variables that increase the growth of the economy, foreign direct investment and trade openness holds a very prominent position. Trade openness boosts

the economy as it provides employment opportunities etc. Similarly, foreign direct investment is also a driving fuel for achieving higher economic growth rates. FDI brings capital into the host country and also increases production. This further increases employment and thus causing an upsurge in level of income of the people of country. FDI and TOP both have been found to have an optimistic effect on economy's growth rate by many previous studies. FDI and top also correlate with each other. Increase FDI increases top opportunities and increased top in return attracts more FDI. Thus, both the variables also boost each other up. When both of these variables are acting together and are being utilized correctly, they increase the growth level.

Trade is considered to be a motivational negotiator for the economic growth. Liberalization of Trade has shown to have enormous advantages in the countries that liberalize trade. Trade liberalization enhances economic growth and development in a nation rather than hindering it, which happens in presence of trade restrictions. Trade liberalization has gained a lot of importance in global trade policies, since 1970, due to its immense benefits. It has been noticed, and proven as well, that with trade liberalization the GDP and economic growth and development of a country increase to a greater extent.

The past studies are evidence of the fact that with trade liberalization, the GDP increases. Thus there is an optimistic connection among growth of an economy and openness. When trade is liberalized the factors of production are utilized up to the maximum, the allocation of resources become efficient, the production increases, exports increase, access of people to different types and all types of goods and services takes place, demand increases, the employment opportunities rise, investment increases; not only domestic but foreign investment as well, more and more projects get financed, moreover, factors of production can move easily to any place where they find better opportunities for themselves and so on. Thus the benefits of trade liberalization are many to count.

Many studies highlighted the optimistic link amongst growth and trade openness. A study observed effect of trade liberalization and growth [Wacziarg and Welch (2003)]. A study displays that the consequence of trade liberalization is positive on import demand [Thomakos and Ulubasoglu (1980)]. Some studies also focus on influence of liberalization of trade on balance of trade of developing countries [Wu et al. (2010)]. Different studies have also analyzed the connection or relation between trade liberalization and GDP by using different variables such as external debt burden, remittances, poverty, output growth, exports, industrial growth, foreign direct investment, human capital, etc. [Zafar and Butt (2008), Siddiqui and Kemal (2002), Siddiqui and Iqbal (2005), Anwar, Shoukat and Hussain (2010), Iqbal, Shaikh and Shar (2010), Chauhdary, Malik and Faridi

(2010)]. Even through all different variables, all these studies suggest that there is a direct, optimistic, strong association amongst trade openness and growth of economy.

The present research inspects role of FDI and trade openness for the growth of economy of Pakistan for the time 1980-2018.

## 2. Literature Review

Malik (2010) studied the influences of trade policies and economic reforms on the agriculture export performance of Pakistan. The period was 1960- 1990. Diversification, openness, world demand for agriculture products, world market potential and domestic supply side policy were variables that were studied. Methods of vector error correction and co-integration were applied. The study used Johansen's VECM (vector error correction model). The inferences also indicated that there is an equilibrium or long-run connection amongst the actual value of diversification, competitiveness, openness, agricultural exports and world demand for agricultural goods. Thus, the effect of openness trade on the agriculture sector of Pakistan was found to be positive.

Chaudhry et al. (2010) inspected causality bond among growth, trade liberalization and human capital in Pakistan. The study utilized the data of the years 1972-2007. This study used several time series estimation econometrics such as co-integration analysis, error correction models and Granger causality test. The variables studied were human capital stock, population, secondary school enrolment, primary school enrolment, higher education enrolment, aggregate production, factor productivity, real capital stock, and trade openness. The study concluded that there is a positive affiliation among the growth of the economy and trade openness.

Iqbal et al. (2010) examined causality relation amongst Foreign Direct Investment, growth, and trade in Pakistan. The quarterly data from 1998- 2009 was taken. The research applied the integration and cointegration tests on their VAR model. The VECM causality test was also employed. The variables were: foreign direct investment, GDP, export, import. Results revealed there is an optimistic link among FDI, growth and trade.

Khan and Kalirajan (2011) studied consequence of trade charges on the exports of Pakistan. The study utilized the cross-section empirical data of Pakistan from the years 1999 and 2004. Variables included in the model were: population of the country, per capita GDP, distance between the exporting and importing country, tariff rate, and real exchange rate. OLS method was applied to calculate the model. Secondary data was used. the study found out a negative link between higher trade costs and export rate.;

Umer, F. (2014) deliberate effect of TO on growth of economy. This study collected data from 1960-2011 from Pakistan. The ARDL technique was utilized in the study. Gross Domestic Product was applied as a dependent variable and investment, human capital, trade restrictions, and trade volume were used as explanatory variables. The consequences displayed that TO acts as a motivator for an increase in economic growth as it increases employment opportunities etc.

Keho, Y. (2017) analyzed the impact that trade openness has on the growth of the Cote d'Ivoire economy. Data was collected from 1965-2014. Trade openness, capital, and labor were independent variables and GDP was dependent variable. The following article applied an autoregressive distributed lag model (ARDL). The results reveal that TO increased development of economy.

Ahmad et al. (2017) examined influence of trade openness on development of the economy. The data from Pakistan was collected from 1975-2014. GDP was a dependent variable although trade openness, exports, gross fixed capital formation, imports, and FDI were used others variables. The study used the Johansson cointegration approach. The results showed a positive effect of TO on economic growth.

Chandio et al. (2017) premeditated influence of financial development and trade openness on Pakistan's growth of economy. Data was composed from 1970-2014. The study applied ARDL methodology. Trade openness and national credit delivered through banking subdivision were applied as independent variables and Gross Domestic Product was applied as the dependent variable. The conclusion of following article exhibited that TO expands the development of Pakistan's economy.

Intisar et al. (2020) observed consequence of trade openness and human capital on growth of Asian economies. The study collected data from different regions of southern Asia and western Asia. The data was collected from 1985-2017. The study employed FMOLS and DOLS techniques. Total population, tertiary education, trade openness, urban population, foreign direct investment, and labor force participation rate were all used as independent variables. Gross Domestic Product per capita was applied as the dependent variable. The results indicated a noteworthy and optimistic relation of trade openness with GDP.

Malefane (2020) studied the effect that TO has on the growth of economy of Botswana. The study collected data from 1975-2014. Four diverse proxies of TO were applied in the study and other variables such as investment, government expenditure, inflation, and financial development were also used as independent variables. GDP appeared by means of a dependent variable. The study utilized ARDL methodology. The study concluded that TO have a positive and substantial influence on Gross Domestic Product.

Raghutla (2020) examined impact instigated by TO on development of selected emergent economies. The data for BRICS countries were collected from 1993-2016. GDP was applied alike a dependent variable although technological progress, inflation, trade openness, financial development, and labor force were applied by means of independent variables. The study used panel data methodology. The results depicted that TO increased growth of economy.

Dritsaki, M. and Dritsaki, C. (2020) studied the causal relationship between trade openness and economic growth. The study collected data from Baltic countries from 1990 to 2020. The study employed Dumitrescu and hurling non-causal granger tests. The findings revealed that there is bi-directional causality among growth of economy and trade openness.

Udeagha and ngepah (2020) study influence of TO on growth of economy in South Africa. Data was collected from 1960-2016. The study employed the NARDL approach. Capital labor ratio, human capital, trade openness, government expenditure, inflation, financial development, and health expenditures were applied alike independent variables although Gross Domestic Product was used as dependent variables. The consequences revealed that TO have optimistic and significant effects on development in short run but not in long run. Thus the study found asymmetrical short-run and long-run results.

Saleem et al. (2020) scrutinized dynamic causal connection among foreign direct investment, trade openness and growth. The data was collected for time of 1975-2016 for selected south Asian nations. The study applied the ARDL technique. The results depicted that trade openness increased the growth in the selected countries.

Alaam and Sumon (2020) studied the causal linkage amongst openness and growth. The data for fifteen Asian nations were placid from 1990-2017. GDP appeared by means of a dependent variable and FDI, TO and capital appeared alike independent variables. The study used FMOLS, panel cointegration techniques, panel causality and DOLS approaches. The consequences suggested that economic growth is positively and significantly affected by trade openness.

Aremo (2021) analyzed the consequence of openness and financial on development of nominated sub-Saharan African economies. For this purpose, data was collected from 1980-2017. The study applied different GMM and system GMM methodologies. The dependent variable was Gross Domestic Product. The independent variables were: financial openness, total enrolment, trade openness, gross capital formation, inflation and government expenditure. The consequences suggested that TO have an optimistic and momentous impact on progress of low-income economies while the influence of TO on development is mixed in situation of middle-income countries.

### 3. Data & Methodology

This section describes variables are included in the study to observe out the influence of TO and FDI on the growth of economy of Pakistan. GDP is dependent variable, which is utilized by means of a substitution variable for growth of economy. The independent variable of study is foreign direct investment, trade openness, exchange rate, inflation and employed labor force.

### A. Time Period

The study utilizes time series data of Pakistan from the years 1980-2018.

### B. Data Sources

The data of all the variables are collected from world development indicators (WDI).

### C. Model Specification

To show the effect of TOP, INF, EXR, ELF and FDI on GDP, following equation is estimated:-

$\ln GDP = \alpha_0 + \alpha_1 \ln TOP + \alpha_2 \ln FDI + \alpha_3 \ln INF + \alpha_4 \ln EXR + \alpha_5 \ln ELF + \mu$ Here,

GDP = gross domestic product; the dependent variable. TOP = trade openness,

FDI = foreign direct investment, INF = inflation,

EXR = exchange rate,

ELF = employed labor force

$\alpha_0$ = intercept i.e. the impact of those variables which are known to the researcher. $\alpha_1$, $\alpha_2$, $\alpha_3$, $\alpha_4$, $\alpha_5$ = the co-efficient of the slope.

Ln = log of the variables.

$\mu$ = impact of the factors unknown to the researcher

### 4. Results and Discussion

The results of unit root test and ARDL approach are presented here.

## A. Unit Root Test

Time series data always has a trend whether increasing or decreasing. So first of all the stationarity of variables is tested. The ADF unit root assessment is applied to test order of integration. The ADF unit root experiment gave the following results:-

Table 1- Unit Root Test

| Variables | Level | | 1$^{st}$ Difference | | Result |
|---|---|---|---|---|---|
| | Intercept | Trend & Intercept | Intercept | Trend & Intercept | |
| Log-GDP | -4.53213 | -5.040762 | -8.78579 | -8.658625 | I(0) |
| | 0.0009 | 0.0013 | 0.0000 | 0.0000 | |
| Log-TOP | -6.06021 | -5.970435 | -9.70101 | -9.548874 | I(0) |
| | 0.0000 | 0.0001 | 0.0000 | 0.0000 | |
| Log-ELF | -0.50677 | -2.232189 | -4.03243 | -3.974073 | I(1) |
| | 0.8778 | 0.4576 | 0.0037 | 0.0194 | |
| Log-EXR | -2.11892 | 0.164387 | -4.43416 | -6.401510 | I(1) |
| | 0.2388 | 0.9967 | 0.0012 | 0.0000 | |
| Log-FDI | -1.98087 | -1.414742 | -5.58370 | -5.966545 | I(1) |
| | 0.2935 | 0.8389 | 0.0001 | 0.0001 | |
| Log-INF | -4.22931 | -1.995526 | -5.33442 | -5.235759 | I(0) |
| | 0.0026 | 0.5834 | 0.0001 | 0.0008 | |

Source: estimated by author using E-views 9.

The results have mixed level of stationarity of variables so it means ARDL technique is appropriate to apply.

## B. ARDL Estimates of the Model

ARDL is applied to find out the effect of TOP on GDP. But the first step is to find whether there occurs or not long-run relation amongst all variables. This is done with the bound testing.

Table 2- Bound Testing

| Test Statistic | Value | k |
|---|---|---|
| F-statistic | 6.368673 | 5 |
| Critical Value Bounds | | |
| Significance | I0 Bound | I1 Bound |
| 10% | 2.26 | 3.35 |
| 5% | 2.62 | 3.79 |

*Source: estimated by the author using E-views 9.*

**Short-run and Long-run Results through ARDL**

The short-run and the long-run estimates are given in the table below:-

Table 3- ARDL Short-run and Long-run Results

| Long Run Coefficients | | | | |
|---|---|---|---|---|
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| **LOG_TOP** | 0.290573 | 0.135139 | 2.150184 | 0.0418 |
| **LOG_ELF** | -0.843946 | 0.433214 | -1.948106 | 0.0632 |
| **LOG_EXR** | 1.826605 | 0.922973 | 1.979046 | 0.0594 |
| **LOG_FDI** | 0.303989 | 0.202535 | 1.500922 | 0.1464 |
| **LOG_INF** | -0.761923 | 0.297126 | -2.564311 | 0.0170 |
| **C** | -5.668688 | 5.245496 | -1.080677 | 0.2906 |
| **Short Run Coefficients** | | | | |
| **Variable** | **Coefficient** | **Std. Error** | **t-Statistic** | **Prob.** |
| **D(LOG_TOP)** | 0.264470 | 0.107246 | 2.466011 | 0.0212 |
| **D(LOG_ELF)** | -0.768132 | 0.387475 | -1.982402 | 0.0590 |
| **D(LOG_EXR)** | 1.824385 | 1.943033 | 0.938936 | 0.3571 |
| **D(LOG_EXR(-1))** | 4.880703 | 1.878932 | 2.597594 | 0.0158 |
| **D(LOG_FDI)** | 0.276681 | 0.184741 | 1.497665 | 0.1473 |
| **D(LOG_INF)** | 0.487871 | 0.246709 | 1.977512 | 0.0596 |
| **CointEq(-1)** | -0.910166 | 0.154866 | -5.877137 | 0.0000 |
| Cointeq = LOG_GDP - (0.2906*LOG_TOP -0.8439*LOG_ELF + 1.8266 *LOG_EXR + 0.3040*LOG_FDI -0.7619*LOG_INF -5.6687) | | | | |

*Source: estimated by the author using E-views 9.*

As GDP is used as a dependent variable and TOP, FDI, ELF, EXR, and INF are used as independent variables. The table displays that regression coefficient of trade openness is 0.290573 and it has a positive sign; this means TOP has a optimistic influence on GDP and with a one percent upsurge in TOP, GDP increases by 0.290. Our findings are consistent with many studies. [Umer, F. (2014), Chandio et al. (2017), Raghutla (2020].

The coefficient of ELF is -0.844 which depicts that GDP and ELF are inversely related. With a one percent increase in ELF, GDP falls by 0.843946. The growth of GDP of any country gets negatively affected by increment in ELF when there is disguised unemployment when bad job matching exists when only a few people benefit from higher wages and it increases the gap between poor and rich; moreover, high job security also happens to affect GDP negatively. Some studies also depict a negative impact of female employment on GDP in developing countries. Thus the study shows a negative correlation of ELF with GDP in long run. [Dehghani et al. (2015), Heckman and Pages (2000), Shahid (2014)].

EXR has a coefficient of 1.826 and with a positive sign, it is clear that EXR has an optimistic influence on Gross Domestic Product. With a one percent rise in EXR the GDP increases by 1.826605 percent. It has been proven in the case of Pakistan, especially, that a higher exchange rate helps in earning more foreign reserves which benefit the country and raises GDP. [Jilani et al. (2010), Razin and Collins (1997), Rodrik (2008)].

INF has a regression coefficient of -0.761923 which, having a negative sign, shows that a one percent rise in inflation makes the GDP fall by 0.761923 or 76%; it has a negative relationship with GDP. Several studies have proven that inflation above a threshold level is dangerous for an economy and in the case of Pakistan same thing was observed. [Hussain and Malik (2011)].

It can also be observed from the table that Foreign Direct Investment has no significant influence on GDP of Pakistan in long run. After crises of 2008, the FDI did not benefit Pakistan so much. Those who do invest in Pakistan, take their investments back after that they have earned profits; so the profit and investment go back to foreign countries. So it does not have a significant impact in Pakistan according to this study.

The table illustrates that in short run TOP, ELF and INF have a momentous influence on Gross Domestic Product. FDI is insignificant in short run as well. The EXR is also insignificant but the one lag of EXR is significant in the short run. The software has taken a single lag of EXR and it has not taken any lag of any other variable.

A look at the error correction term in short run gives clue of whether there is a long-run association or not. If value of co-integration equation is negative and significant, then there is the occurrence of a long-run association. Both these conditions are satisfied in our co-integration equation thus this proves there is a long-run association.
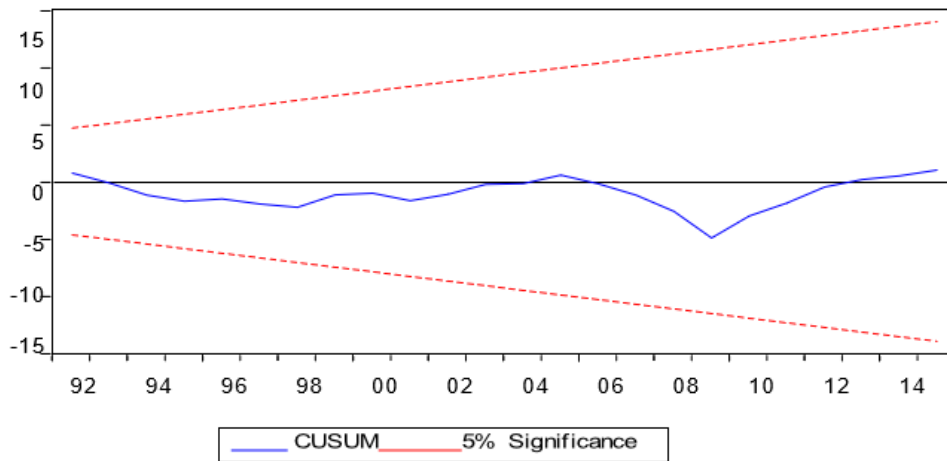
## 5. Stability Test

The stability of estimated model can be checked by using CUSUM experiment and CUSUM Squares assessment.

## A. CUSUM Test

The following diagram shows the CUSUM assessment:-
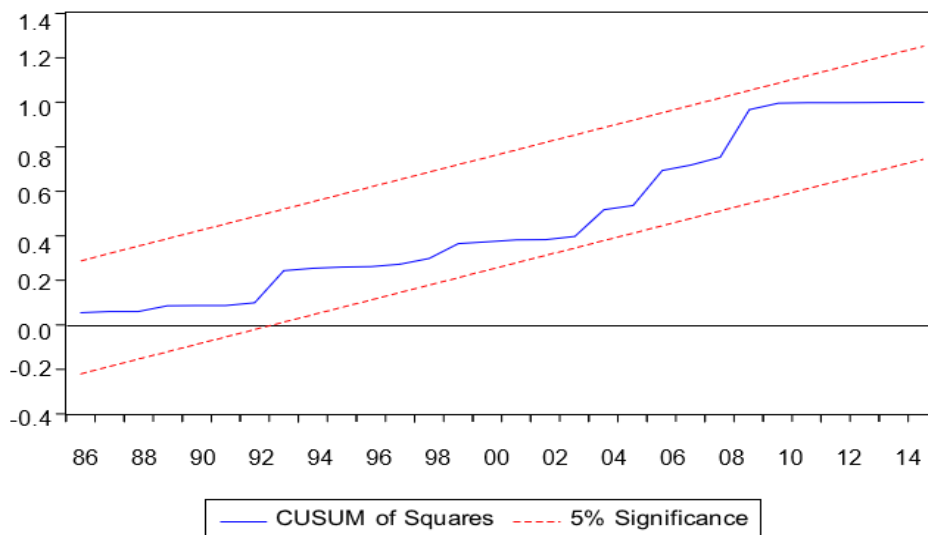
Figure 1- CUSUM Experiment



*Source: estimated by author using E-views 9.*

As shown by the diagram, the blue line of CUSUM statistics lays between the critical limits of red lines at 5% significance, so our data and model is stable.

**B. CUSUM Squares Test**

Following diagram shows the CUSUM Squares test: -

Figure 2- CUSUM Square Experiment



*Source: estimated by author using E-views 9.*

In the diagram it is clear that Blue line exists among critical Red lines at 5% significance, hence the model is stable.

## 6. Conclusion and Policy Suggestions

This study is aimed at finding out how and to what extent FDI and trade openness affect the growth of economy in Pakistan. To examine influence of FDI and trade openness, GDP was applied by means of dependent variable whereas trade openness, FDI, exchange rate, and inflation are also taken as independent variables.

The ARDL technique is employed in following study. The short-run and long-run results are obtained and explained. The study concludes that TO have a positive momentous influence on GDP in both long and short run. While FDI has a positive but insignificant impact on GDP in Pakistan which displays that TO has a more progressive influence on GDP of Pakistan than FDI. Other variables labor force and inflation harm economic growth while the exchange rate affects GDP positively.

Established on outcomes of study, subsequent suggestions can be given regarding policy formulation: -

- The Govt and policymakers should focus on liberalization of trade by reducing tariffs, customs duties, and other types of taxes on exports to enhance the economic growth of Pakistan.
- As the study highlights that labor force harms GDP because there is surplus labor in Pakistan. The govt should make expenditure on the training of labor to make them effective in this way growth can be increased.
- Such policies should be formulated regarding the foreign direct investment that it should use for productive purposes which further increases economic opportunities. Economic stability should be obtained so that people do not hesitate while investing in or trading with Pakistan.

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