The Impact of Trade Liberalization on Economic Growth: A case study of Pakistan

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Abstract

This study empirically analyzes the impact of trade liberalization on the economic growth of Pakistan over the period 1972 to 2014 .Gross fixed capital formation, Trade liberalization, Labor force participation, inflation, interest rate are important explanatory variables. While economic growth which is measured by (GDP) is dependent variable used for the model specification. The study used Johensen co-integration approach developed by Johensen and Jeselius (1990).The results show that trade liberalization and gross fixed capital have positive and significant impact on economic growth. Inflation and interest rate have negative impact on economic growth. And labor force has positive impact on economic growth. Positive correlation between trade liberalization and economic growth has been explored in this study.

Keywords: Trade liberalization (LIBE), Economic growth (GDP), Co-Integration, Labour force participation (LFP), Interest rate (INT), Inflation (INF).

1. Introduction

Trade liberalization plays an important role in economy and assumed to be an engine of growth. Trade is taking place not only in terms of commodities but also in terms of technology, flows of ideas and knowledge spill over. Trade liberalization in global economy during time is considered by economists that it has a positive impact on economic growth and it will lead micro and macro-economic activities. Trade liberalization is most important for Pakistan economy to enhance the economic growth. Trade liberalization can be seen as the reduction or removal of imports and exports restrictions (tariff and quotas) and making an easy access to the trading partners.

Trade liberalization is the removal or reduction of restrictions or barrier on the free exchange of goods between nations. This includes or removal or reduction of both tariff (duties and surcharges) and non-tariff obstacles (like licensing rules, quotas and other requirements). The easing or eradication of these restrictions is often referred to as promoting free trade. It is a policy by which government does not discriminate against imports or interfere with exports by applying tariffs (to imports) or subsidies (to exports) or quotas. According to the law of comparative advantage, the policy permits trading partner's mutual gains from trade of goods and services (Pacheco-L 2005).

The world has become global village and the present era of nation's history is the era of globalization. No country in this age can survive without foreign trade. Countries are liberalizing their trade policies to achieve maximum gains from the opportunities of comparative advantage. Trade liberalization is now considered as one of the primary tools to increase the economic growth. Rich literature is available on the relationship between trade liberalization and economic growth but it has remained contentious among the policy makers due to the empirical results obtained from various studies.

According to Manni and Afzal (2012), trade liberalization policies open up the opportunity for countries' economies to enhance growth and foster overall development. During last few decades world globalization process brought about many fundamental changes in the basic structure of economic activities at both national and international level. One of the most important characteristic of integration of world economy is the rapid movement towards the trade liberalization. The role of IMF, World Bank and WTO cannot be neglected in this regard (Parikh, A 2004). Historical data of last decades shows that volume of world trade has been dramatically

increased. The World development indicator showed that in 1990s world trade to GDP-ratio increased which increases the per capita income of about 3 billion people in the world.

Trade liberalization process in Pakistan during late 1980s and has been growing with the passage of time. Government of Pakistan has adopted many reforms to strengthen the free international transaction flows. IMF stabilization and structural adjustment packages are implemented till 2003 (Chaudhry et al. 2010). One of the most important fact explored by World Bank is that current economic reforms and policies implemented but government of Pakistan are sufficient for trade liberalization and south Asia region economy of Pakistan is most open (Shaheen et al. 2013). Due to trade liberalization improvement of Pakistan incentive structure and exports environment surely contributed to its strong exports performance in recent years. The speed with which trade liberalization has taken place during the last decades is very impressive. The numbers of regulatory duties has declined significantly.

Trade liberalization and degree of openness of a country during time, is a category that is being considered by economists, planner and policy makers of the world (Herath 2010). Many economists believe that trade liberalization leads to good macro-economic performances and foster economic growth. Most of the studies like World Bank, international monetary funds, and organization for economic cooperation recommended that trade liberalization have a positive relation on economic growth. A wide range of literature on Trade liberalization is present and has been utilized in many different studies.

Trade liberalization-led-economic growth is a most debated topic among the economists. Mercantilist Smith and Ricardo emphasized on the importance of trade liberalization. Neo-classical growth theories which provide a great deal of modern economic growth theories explained that trade liberalization have positively influenced the economic growth in the medium term but cannot continuously affect growth in very long run (Parikh et al. 2004). Theoretical framework is based upon Romer Endogenous or new growth theory model introduced by Romer (1986) and Lucas (1988). It explains that trade liberalization leads towards economic through various channels. Trade liberalization increases capital inflows and this takes several forms like FDI which is an important source of capital inflow which fulfils the investment gap in the economy. Capital inflow increases investment level in the economy which leads towards more production, more output and increases market size. Furthermore, increase in production process will cause increase in employment level which reduce poverty. It provides developing economies access of new technological innovation of developed countries. It provides both consumer and producer, easy access to larger markets so they can gain the benefits of economic scale. Another important impact of trade liberalization operates through knowledge and technology transmission.

The relationship between trade liberalization and economic growth can be explained by the chart explained in figure below:
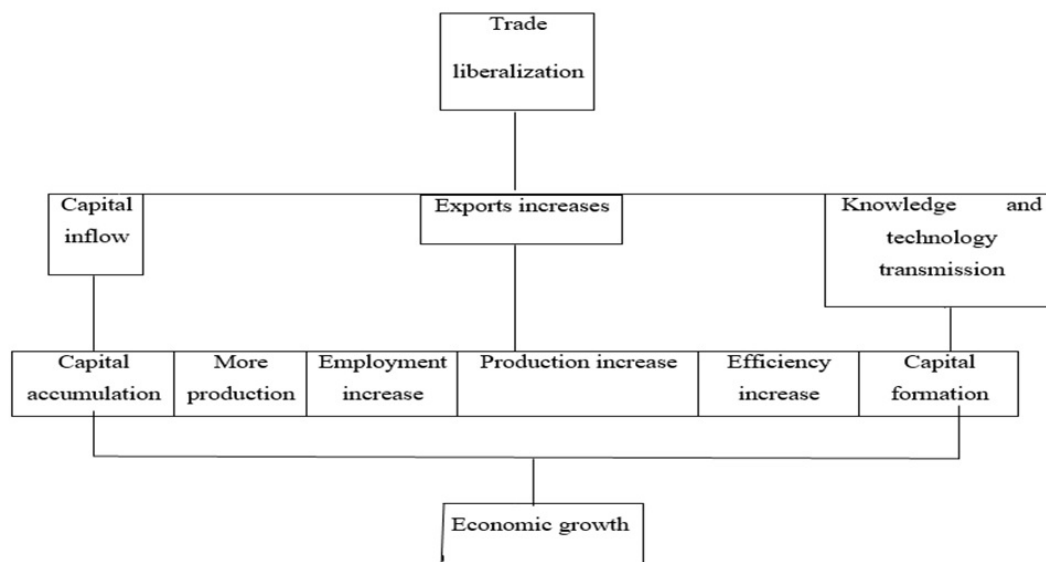
Along with the proponents, there are also many opponents of trade liberalization, based on their assertion that

free trade agreements generally do not increase the economic freedom of the poor or the working class, and frequently makes them poorer. Where the foreign supplier allows de factor exploitation of labour, domestic free-labour is unfairly forced to compete with the foreign exploited labour, and thus the domestic working class would gradually be forced down to the level of helotry (Rahimi et al. 2011).

In this paper we examined the relationship between trade liberalization and economic growth in Pakistan. Data from 1972 to 2014.The objective of this study is to investigate the impact of trade liberalization on economic growth. We use trade liberalization and some other important variables which have significant effect on growth are used for the model specification such as gross capital formation, labour force participation, inflation and interest rate. Distinguishing features of this study are that it incorporate all important and relevant macro-economic variables which were not included in other studies. Time series econometric techniques are used for estimation.

1.1 Significance of the study

Trade liberalization is often considered as a significant tool for increasing economic growth in the world economies. Exports of those economies have greatly liberalized their economies, and consequently these countries have also experienced the fastest growth of GDP. Since the trade liberalization and economic growth has extensively been analysed in the world, it has remained controversial among policy makers and economists based on empirical findings (Choudhry and Imran, 2009). Trade liberalization has significant impact on growth. Economic theory confirm the conventional wisdom holds the reality that trade liberalization accelerates overall economic growth.

1.2 Objectives of the Study

The aim of the study is to investigate the impact of trade liberalization on economic growth in Pakistan from 1972 to 2014. An attempt also was made to explore the insight into the trends and relation of various variables. The study has following specific objectives:

- There is positive impact of trade liberalization on economic growth in Pakistan.
- There is positive impact of gross fixed capital formation on economic growth.
- Labour force participation has positive impact on economic growth.
- What is the relationship between inflation and economic growth?

2. Data and Econometric Methodology

The linear regression model will be used for regressing the predictors on the predictand. The model takes the form:

$GDP = \beta_0 + \beta_1 LIBE + \beta_2 GFCF + \beta_3 INF + \beta_4 INT + \beta_5 LFP + \varepsilon$

2.1 Data and Source

The study is based on the secondary source of data ranging from 1972 to 2014. Economic growth is the main dependent variable proxied as GDP (Gross domestic product). The independent variables are trade liberalization (LIBE), interest rate (INT), inflation (INF), labour force participation (LFP) and gross fixed capital formation (GFCF). The source of the data is the World Development Indicator (WDI). The Description of all the variables have been provided in the Table 1.

2.2 Methodology

We will use two types of the tests for our analysis. They are described as below:

2.2.1 Augmented Dickey Fuller (ADF) test

In time series analysis an Augmented Dickey-Fuller test (ADF) for the unit root is often used. ADF test is an augmented version of dickey fuller test for a larger and more problematical set of time series models. The augmented dickey fuller statistic is a negative number, which is used in the test. The more negativity of it shows that the stronger decision about the refusal of the hypothesis which is given as there is a unit root at some level of confidence. The ADF test is applied to the model;

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + ... + \delta_{p-1} \Delta y_{t-p+1} + \varepsilon_t,$$

In this equation α present the constant term, β present coefficients for the time trend and p is the lag order for the autoregressive process. The ADF formulation makes the advanced order process possible after the addition of the

order p. It means when we add lag length p has to be calculated. Then we use unit root test under the null hypothesis γ=0 against the alternative hypothesis γ < 0.

$$DF_\tau = \frac{\gamma}{SE(\gamma)}$$

After the computation the value the T-Statistic is compared with the critical value. If statistic is less than critical value then we reject the null hypothesis and conclude that the series is stationary.

2.2.2 Johansen Jeselius Test

Co integration test is designed as Johansen Jeselius test (1990). This test is based on vector autoregressive (VAR) model. It is used to test whether non-stationary series are co-integrated or not. The Johansen co-integration tests lots of co-integrating relations. All factors are used as endogenous then the test is not effected by choice of output factors and the variable being normalized. VAR deals with endogenous factors in the composition as a function to show that all endogenous factors in the structure.

A model which has more than two variables can have the opportunity of containing the one or two co integration vectors. If there is more than two variables in the model than there is a problem will arise. To resolve this problem Johansen approach is best for multiple equations. This technique is a five step procedure and is provided in detail by the author Johansen Jeselius (1990).

3. Empirical Results and Discussion

3.1 ADF Test

Unit root test is necessary for all the variables at the first place to check their stationarity. Then DF test was applied to test the integration properties of the data in the time series data. The mean and the variance of the data are same for the same time period to accomplish the stationary characteristics.

3.2 Unit Root Test

Unit root test is applied to check the stationarity of the variables. We have applied this test on the variables: Gross domestic product per capita (GDPPC), trade liberalization (TLIBE), labour force participation (LFP), gross fixed capital formation (GFCF), interest rate (INT), and inflation (INF). The results are displayed in Table 2. It came out that all the variables became stationary at the level of integration I (1). This test makes the study free of spurious regression.

3.3 Johansen-Juselius Test for Co-Integration

Johansen Juselius test was applied after making all the stationary. The results of ADF test suggest that as all the variables are on first difference, so we can apply the Johansen Juselius co integration test. Johansen co integration test results are shown in Table. 3 on the basis of two likelihood ratio test statistics of the trace and maximum Eigen statistics which are most common in use to find out the number of co integrating vectors in the study.

It is Co-integration between and also sign of a long run correlation between the dependent economic growth (GDP) and independent variables GFCF (gross fixed capital formation), LFP (labour force participation), LIBE (trade liberalization), INF (inflation) and INT (interest rate). The Co-integration test was conducted for series as they are integrated at first difference or integrated of first order. The first column shows the hypothesized values second shows Eigen values. Third column have trace values and in next column critical values shows. This is based on Mackinnon-Haug-Michelis (1999) of trace. In the last column probability values are showed. Trace test indicate one co-integrating equation at the 0.05 level. The first value of trace statistic is 126.2007 which is greater than trace critical value 117.7082. Next trace value is less than critical value. Third value of trace statistic is also lower than critical value. And fourth value is 29.76291 and less than critical value 42.91525 and all other values are also less than critical values. The first column shows the one Co-integration value. Linear deterministic trend was assumed in this test. The trace statistic criterion shows that at most one co-integrating vector exists. Another criterion i.e. Maximum-Eigen statistic test confirm the null hypothesis rejection at level 5%.

The next Table no. 4 shows the results of the unrestricted co-integration rank test. The results verify the long run significant relationship between the variable. In the results of Table no 4, first column shows Co-integration equation. The second column shows Eigen values, next column shows the Max-Eigen statistic values and second last column shows critical values. In the last column probability values are showed. First value of the Max-

Eigen statistic value is 45.69014 which is greater than critical value 44.49720. So max Eigen value also indicate one co-integrating equation at level 0.05. Both values show the rejection of hypothesis at 5% level.

3.4 Error Correction Analysis (Stability Condition)

The error term represents how quickly the adjustment of variables takes place to restore the equilibrium in the dynamic model. Table no 5 shows the stability analysis where dependant variable is GDPPC of Pakistan and independent variables are trade liberalization, labour force participation, interest rate, inflation, gross fixed capital formation.

Column 1 of Table no 5 shows the list of dependant and independent variables. Column 2 shows the co-integrating vectors. Column 3 shows the error correction coefficients. Last column shows the significance of these variables. Stability condition is used to analyse the error correction mechanism. The necessary condition of Stability condition is that the sum of the product of co-integrating coefficient and error correction coefficient must be negative. This is satisfied in our case. The sufficient condition of stability condition is that the individual product of co-integrating coefficients and error correction coefficient be negative. The variable TLIB show positive sign and it is significant as well so, if any discrepancy occurs in the long run in the model, it would be corrected by TLIB. The variable INT is showing negative sign and it is significant in our case. GFCF is also negative sign and significant in our case. If any discrepancy occurs in the model it would be corrected by that variable.

4. Conclusion and Policy Recommendations

4.1 Conclusion

This study empirically analyzes the impact of trade liberalization on economic growth in Pakistan over the period 1972 to 2014. The Johansen co-integration technique developed by Johensen-Jeselius (1990) is used in this study. We use economic growth as dependent variable which is measured by (GDP) and gross fixed capital formation, labour force participation, inflation, interest rate and trade liberalization as independent variables in this study. Results reveal that trade liberalization has positive impact on economic growth.

Results show that gross fixed capital formation will be also has positive impact on economic growth. And inflation has negative impact on economic growth. When inflation increase it is not good for economy. As well as interest rate has negative impact on economic growth. Labour force has positive impact on economic growth.

According to theoretical literature and many empirical studies, it has been proved that trade liberalization is beneficial for every country. Our study empirically proves in the favour of the Trade liberalization. Trade liberalization leads to increase the economic growth. Every country who practices the trade liberalization gains the benefits of increasing economic growth. Most of the economic literatures conclude that trade liberalization leads to an increase in welfare derived from an improved allocation of domestic resources.

Trend and structure of the Pakistan economy also proves that the years in which Pakistan became open to the global world, its economic growth also started following increasing trends. Trade liberalization expands economy to other country. It gives opportunities to exports and imports to other countries. So we summarize that trade liberalization is beneficial for the economy. Therefore it has a positive impact on economic growth in Pakistan.

4.2 Policy Recommendations

In this study we find that trade liberalization has positive impact on economic growth in Pakistan.

The following polices have been recommended on the basis of empirical analysis. All these recommendations will help to speed up the growth of Pakistan's economy:

- The study suggests that Pakistan should go more of the trade liberalization policies to enhance more economic growth.
- A high rate of inflation, particularly inflation in food prices, is a constant danger to the wellbeing of the poor. There is no doubt that high rate of inflation if not checked effectively, will undo most of policies to enhance growth.
- Since Pakistan is a labour abundant country, it should give priority to the production and export of labour-intensive product, such as textile.

- Pakistan should improve the performance of its mediation for trade liberalization to be effective in promoting growth and development.
- For trade liberalization to be a significant contributor to economic growth, Pakistan should focus on improving infrastructure, capital accumulation, establishing entrepreneurship, developing a secure macroeconomic framework.

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Table 1. Descriptive Statistics

	GDPPC	LFP	GFCF	TLIB	INT	INF
Mean	2.100577	49.83161	16.03371	33.53000	4.631088	9.473870
Maximum	6.692049	58.81000	19.23542	38.90949	6.813333	26.66303
Minimum	-1.899638	32.20000	11.43511	27.71982	1.835121	2.914135
Std. Dev.	1.946800	5.072849	1.954491	2.855445	1.489359	5.258987
Jarque-Bera	0.501559	73.42443	4.501914	0.723334	2.930363	23.99287
P-value	0.778194	0.000000	0.105298	0.696514	0.231036	0.000006

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Table 2. Unit Root Test on Level

Unit Root Test on Level						
Variables	None	Lags	Intercept	Lags	Intercept and Trend	Lags	Conclusion
GDPPC	-1.6119	1	-1.9448	0	-2.624	0	I(1)
TLIBE	-0.0790	0	-2.2473	0	-2.4358	0	I(1)
GFCF	-0.2399	0	-1.8819	0	-2.1324	0	I(1)
LFP	0.18054	1	-1.9490	1	2.0628	0	I(1)
INT	-0.7222	0	-1.5729	0	-2.6831	0	I(1)
INF	-1.4019	0	-1.8089	1	2.4853	1	I(1)

Table 3. Results of the Johansen Juselius Co-Integration

Date: 12/21/15   Time: 18:59
Sample (adjusted): 1974 2014
Included observations: 41 after adjustments
Trend assumption: Linear deterministic trend (restricted)
Series: GDPPC GFCF LFP TRADE INF INT
Lags interval (in first differences): 1 to 1
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.671886	126.2007	117.7082	0.0130
At most 1	0.567197	80.51052	88.80380	0.1708
At most 2	0.329864	46.17416	63.87610	0.5921
At most 3	0.302213	29.76291	42.91525	0.5163
At most 4	0.197866	15.00940	25.87211	0.5738
At most 5	0.135499	5.969719	12.51798	0.4642

Table 4. Unrestricted Co-integration Rank Test (Maximum Eigen Value)

Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.671886	45.69014	44.49720	0.0369
At most 1	0.567197	34.33636	38.33101	0.1342
At most 2	0.329864	16.41125	32.11832	0.8924
At most 3	0.302213	14.75351	25.82321	0.6565
At most 4	0.197866	9.039681	19.38704	0.7204
At most 5	0.135499	5.969719	12.51798	0.4642

Table 5. Results of Stability Condition

variables	C.I vector	E.C coefficint	C.I coff*	E.C coeff	Significance(E.C)
GDPPC	1	0.006797	0.006797	ok	significance
LFP	-15.453	-0.00678	0.0104776	ok	insignifinace
GFCF	-79.097	0.004644	-0.36733	ok	significance
TLIB	20.5619	-0.00951	-0.19552	ok	significance
INT	-10.8244	-0.00088	0.009558	ok	significance
INF	10.74978	-0.02289	-0.24601	ok	insignificance
		-0.02862	-0.68773		