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Trade liberalization and Economic Growth on Indian Economy Using ARDL Model

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Abstract

There has been a discussion among Economists on the impact of trade liberalization on economic growth of the country , most especially to developing nations. While some see a positive impact of trade liberalization on economic growth, others found it to be otherwise. India adopted trade liberalization policy in the year 1991; it is in light of this that the study investigates the impact trade liberalization has on economic growth of India. The study employed the Augmented Dickey Fuller (ADF) unit root test shows all variables to be integrated of order one, shows the presence of one cointegrating equation among the variables i.e. the variables were found to have long run relationship. Long run estimates shows the presence of a positive and significant relationship between Openness and GDP, FDI was also found to have a positive relationship on GDP while Exchange rate exerted a negative impact on GDP. The response of GDP to a unit standard deviation shock in Openness and FDI to be positive, hence indicating a positive impact of the variables on GDP, while the response of GDP to shock in Exchange rate was negative all through the period, indicating a negative impact of exchange rate on GDP. As policy recommendations, the study suggested among others that the government should continue to pursue trade liberalizing policies aimed at ensuring free trade, however, more efforts should be directed towards export promotion through granting of incentives for export production and reduction of export tariffs. This when done will lead to favorable balance of payment, and also economic growth of India.

Key Words: Economic Growth, India, Liberalization, Trade.

Introduction

In recent times, many countries especially developing ones have embarked on programs aimed at trade liberalization with a view to expanding its trade level with the rest of the world. Ashok and Corneliu (2004) sees trade openness policy as one of the most controversial issues because there is a tendency to improve imports more than exports, hence leading to trade deficits and thus contributing to low economic growth in the future. Romain and Karen (2008) noted that in 1960; only 22 percent of all countries, representing 21 percent of global population had open

trade policies, but however, by the year 2000, about 73 percent of countries representing 46 percent of the world's population were open to international trade. This point to the fact that countries are continuously adopting policies aimed at liberalizing their trade with the rest of the world. Economy Watch (2010) sees economists as having a conflicting view as regards international trade and liberalization. While some believe gains from trade have gone mostly to developed nations to the detriment of developing nations, others argued that developing countries which followed trade liberalization policies have witnessed favorable gains. It may be fair to say that openness by leading to lower prices, access to better information and also newer technologies has a useful role to play in promoting growth, but it must be accompanied by appropriate policies to yield strong growth result (Diana and Carlos, 2004). Shreesh and Kishore (2012) noted that between 1950's – 80's, protectionism swept the shores of India, politicians favored policies that restricted movement of goods and services from other countries. However, India could not sustain these phenomena forever. It realized that restriction of trade had a negative effect on economic growth of India. For India's economy to grow like other South East Asian tiger countries, it needed to open its boarder to international trade, this proved to be true because India witnessed a growth of 6 percent within 1988-2006 and 8.6 percent within the period 2003-2007 as compared to 4.8 percent during 1981-1988 (Pangariya in Shreesh and Kishore, 2012). The economic reform strategy that was started in India after 1991 as regards openness was to create a major shift in export growth and to attract very large inflows of foreign capital in the form of export oriented FDI (Jayati, 2006). Trade policies to integrate Indian economy with the rest of the world have move faster than internal reforms of the economy and regulatory framework (ET Bureau, 2008). It is in view of the divergent perspectives economists are having that the study tends to examine the impact of trade liberalization on economic growth; taking an empirical case of India.

2. OBJECTIVE

The objective of the study is to examine the impact of trade liberalization policy on economic growth of India.

3. LITERATURE REVIEW

Ashok and Correliu (2004) in their study on the impact of trade liberalization on economic growth, openness and current accounts taking a case study of 42 countries found out that domestic economic growth is often positively related with liberalization for most of the countries. They however concluded that a unit change in liberalization index leads on average to 1.62 percent point change in growth rates.

Shreesh and Kishore (2012) examined the impact of international liberalization on the Indian economy, using the Solow's model as a basis of analysis. Their findings point to the fact that international trade and openness of the economy led to an increase in the overall level of output, hence leading to a faster economic growth.

Romain and Karen (2008) in their paper **Trade Liberalization and Growth** A New Evidence views that liberalization dates mark breaks in growth, investment and openness. They further asserted that countries liberalized their trade regimes witnessed an annual growth rate that was about 1.5 percent higher than before liberalization. They thus concluded that trade liberalization policy raise the level of openness of the liberalizers and hence have significant effect on economic growth.

Diana and Carlos (2004) in their study of eight different countries on the Economic and Social Impact of Trade Liberalization noted that reforms in all the countries studied were so deep and encompassing that it is difficult to separate the effects of trade reforms from the other reforms and arrive at a definite conclusion about their impacts.

Uma et al (2006) carried out a study on the Impact of Trade Liberalization on Employment in India. Their findings showed that although trade liberalization following the reform in 1991 led to economic growth, but the growth was a jobless growth.

Jayati (2006) in her paper titled Trade Liberalization and Economic restructuring posited that Trade Liberalization in India were strategized with a view to creating major shift in the momentum of export growth, and to attract large inflows of foreign capital, but these objectives were not achieved. Rather, it reduced manufacturing investment due to greater threat of import penetration.

Giaruzazmi (2011) carried out a study of the Impact of Trade Liberalization on Economic Performance of Members of OIC which liberalized their economies since 1970's. his findings posits that although the effect differs from country to country, but on the average, trade liberalization has improved the countries' GDP per capita in the medium term, but the ratio of exports, imports and trade over GDP did not improve after trade liberalization. Neil (2008) in his study of 75 liberalizing countries arrived at the conclusion that countries experiencing the lowest rates of growth benefit most from liberalization. The result also suggests that while countries benefit most in the long run, they are likely to suffer from short run negative effects of liberalization.

4. Research Methodology

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The study employed the Augmented Dickey Fuller (ADF) test for unit root, test, Long run estimation, short run estimation and Error correction representation was applied by the study. The data on the variables were sourced from the Handbook of Statistics on Indian Economy and World Bank Database for the period 1981 to 2020.

4.1 Model Specification

In other to examine the relationship between the variables, the model is specified as:

GDP= f (T.L, FDI, EXR)

Where: GDP = Gross Domestic Product.

T.L= Export +Import/GDP

FDI = Foreign Direct Investment.

EXR = Exchange Rate

In other to minimize the level of variance of the data, the natural log form of the variables was taken. Thus, the model is specified as:

$LNGDP= \alpha+\beta 1LNT.L.+\beta 2LNFDI+\beta 3LNEXR +U_t$

Where: β1, β2, and β3 are coefficient estimates and U_t is the error term.

FINDINGS

5. STATIONARITY TEST.

Owing to the fact that time series data is used, in other to avoid spurious regression, the variables are first checked whether they are stationary or not. To carry out this, the Augmented Dickey Fuller (ADF) test for unit root was applied, the result is presented below. GDP ,T.L.,FDI, EXR .

Table 1

Variables	At level (Trend and intercept)		First Difference (Intercept)		
	ADF -Statistics	P-value	ADF - Statistics	P-value	Order of Integration
G.D.P	-6.056	0.000***	-	-	I(0)
T.L.	-1.306	0.870	-6.886	0.000***	I(1)
FDI	-5.989	0.000***	-	-	I(0)
EXR	2.105	1.000	-3.999	0.017***	I(1)

Note: 1. The results have been computed by using ADF test

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It is clear from the above table that GDP and T.L., FDI, EXR, are the variable are stationary at order I(1)and I (0) using both trends and intercept. The p-value in this case is statistically significant and the value of t- statistics is greater than critical values.

Table 2 Lag –Length Selection for Cointegration: GDP ,T.L.,FDI and EXR

Lag	LogL	LR	FPE	AIC	SC	HQ
0	42.44228	NA	0.000340	-2.310987	-2.222110	-2.280307
1	180.9010	53.1816*	1.57e-07*	-9.994342*	-9.727710*	-9.902301*
2	183.0069	3.610169	1.75e-07	-9.886109	-9.441724	-9.732707
3	184.7675	2.816989	2.00e-07	-9.758144	-9.136005	-9.543382

* Indicates lag order selected by the criterion

Source: Computed

As per econometric guidelines, the optimum lag length structure is the one, the value of AIC and SBC criterion is minimum. In the present case, it is minimum 1-1 Lag length. Thus, ARDL model is applied by using 1-1 lags. To test the presence of long - run relationship between the above given variables. The ARDL framework for the existing variable is presented in the following equation:

$$\Delta \ln (GDP)_t = \alpha_0 + \Sigma^{p}_{j=1} b_j \ln (GDP)_{t-1} + \Sigma^{q}_{j=1} c_j \ln (T.L.)_{t-j} + \Sigma^{r}_{j=1} d_j \ln (FDI)_{t-1} + \Sigma^{s}_{j=1} e_j \ln (EXR)_{t-j} + \delta_1 \ln GDP_{t-1} + \delta_2 \ln T.L._{t-1} + \delta_3 \ln FDI_{t-1} + \delta_4 \ln EXR_{t-1} + e_{1t}$$

The parameters δ_1, δ_2 are corresponding long - run multipliers, while the parameters b_j,c_j, d_j,e_j, are the short – term dynamics coefficients of ARDL model. The null hypothesis of the model exhibits no co integration (i.e. $\delta_1=\delta_2$ $\delta_3=\delta_4 = 0$) against the existence of co –integration as an alternative hypothesis (i.e. $\delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq 0$).

In order to empirically analyse the long-run relationships and short run dynamic interactions among the variables of interest (GDP as dependent variable).The first stage of the ARDL model shows that with lag –length 1-1. The value of R –squared is 0.998961, which means that almost 100% variation in the model is explained by the endogenous variables. The P-value=0.000(statistically significant) of F –statistics=92.630, which means the model is statistically fitted well. The value of Durbin Watson statistics is 2.619671 which lies between 2-4,that there is no problems of autocorrelation. In the next step, the Bounds test is applied to find there exists any long - run relationship between the variables. Null hypothesis of the Bounds test approach states that there does not exist only long run relationship between the variable against the existence of long run relationship as an alternate hypothesis. The criterion

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guideline says that if the value of F –statistic is below I(0) bounds, we cannot reject null hypothesis and if it is higher than I(1) bound, we can reject null hypothesis of no co-integration. The value of F –statistics and bound range at different levels of significance is displayed in the table.

ARDL Bounds Test to Co-integration

Table 3 ARDL Bounds Test :GDP as Dependent Variable

Test Statistic	**Value**	**K**
F –statistics	92.63002	3
Significance	I(0)Bound	I(1)Bound
10%	3.02	3.51
5%	3.62	4.16
2.5%	4.18	4.79
1%	4.94	5.58

Source: Computed

The results of the ARDL Bounds test shows that the null hypothesis is rejected on the ground that the value of f- statistics is higher than I(1) bound (i.e, 92.63002 >. 4.16) even at 5% level of significance thus, strongly advocating the existence of long run co integration relationship between the variables.

Table 4. Diagnostic tests : Inva as Dependent Variable

Serial Correlation				**Heteroscedasticity**			
Test statistics		**LM version**		**Test Statistic**		**LM version**	
F-Statistics	**P-Value**	**Chi–square**	**P-Value**	**F-statistics**	**P-Value**	**Chi - square**	**P-Value**
0.619001	0.5448	1.378125	0.5020	0.015469	0.9847	0.033638	0.9833

Source: Computed

It is seen from the table that there is no problem of serial correlation (p-value = 0.502>0.05) and heteroscedasticity as P- value (0.9847>0.05) is statistically insignificant. Therefore, we cannot accept null hypothesis of presence of serial correlation, and the heteroscedasticity in the current framework. Further, the stability of the long-run model is checked by applying CUSUM test.

Stability of the long-run model through CUSUM test

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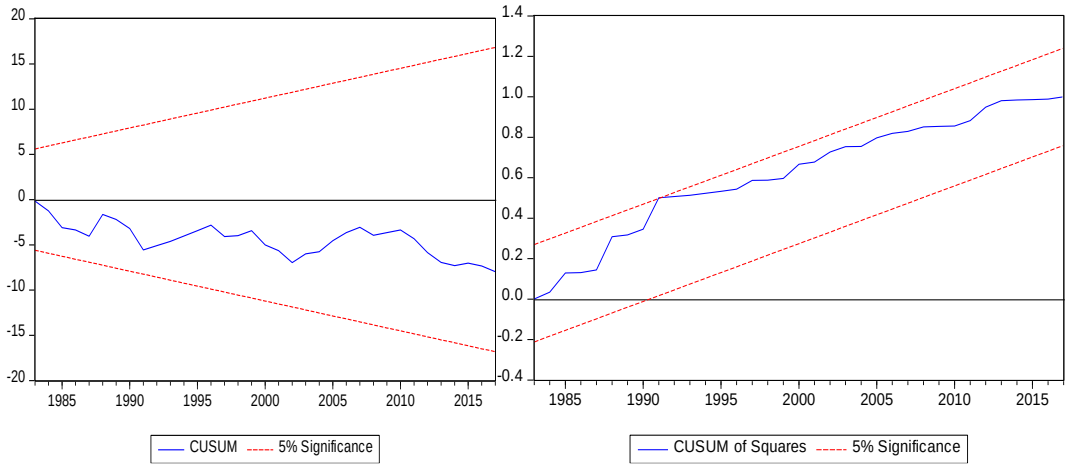

Hence the null hypothesis which states that the regression is correctly specified cannot be rejected as both plots remain in the critical bounds of 5 % level of significance. Specifically, if there is any disequilibrium in the long - run between GDP , T.L.,FDI and EXR then Indian economy will take less than 11 year to converge to equilibrium position. The findings of the study is in conformity to the findings of earlier studies such as Uma et al (2006), Shreesh and Kishore (2012), Romain and Karen (2008) and a host of others that trade liberalization impacts positively on economic growth.

As a policy recommendation, the government should continue to pursue policies aimed at liberalizing the Indian economy so as to encourage free flow of trade by reducing bottlenecks to free trade. However, the government should give more efforts towards export promotion, coupled with enhancement of domestic investment as this can be channelled into improving exports. Government should also consider reducing export tariffs and providing incentives towards production of export goods and services, this when done will lead to a favourable balance of payment and also economic growth of India.

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