"A Study on Impact of Import and Export on Economic Growth of India"

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Abstract: This present paper is an attempt to study the Impact of Import and Export on Economic Growth of India from 1980 to 2018. The data for the study were from RBI – Handbook Of Indian Economics & Statistics. Data were evaluated on the basis of various statistical tools like Unit Root Test, Regression Analysis and Correlation Analysis. This test are necessary to perform as to measure the stationarity and relationship with each other. Unit Root Test measures the relationship and stationarity between Import and Export. Correlation Analysis measure the relationship with the variable that Exchange Rate and Regression Analysis measures whether the dependent variable that is Exchange Rate has positive relation with Import and Export or not.

Key Words: Import, Export, Exchange Rate, Unit Root Test.

Introduction

The relationship between exports, imports and economic growth occupies the center stage in development literature when economists try to analyze the different levels of economic growth of an economy. Exports play an important role in the economic development of any country and are considered as a major stimulus for domestic production by making the best use of natural, human and other resources.

Relationship between imports and productivity tends to be more complicated than that between exports and productivity. Increased imports of consumer products encourage domestic import-substituting firms to innovate and restructure themselves in order to compete with foreign rivals; therefore, imports enhance productive efficiency. Under perfect competition in the neoclassical model, an industry reduces factor usage in the short run when trade barriers are removed and the market is opened up to imports. In the long run, however, the industry becomes more productive and competitive, and expands its investments in new technology, resulting in a rightward shift of the industry supply curve.

Under imperfect competition, an import-substituting domestic market shrinks as imports increase, causing investment to fall and thereby productivity to eventually fall. Furthermore, higher future expected profits lead to more active research and development (R&D) investment and innovation efforts, and such R&D may be greater for exporting firms than for import-substituting firms in light of the large impact of market opening. Imports of capital goods and intermediate goods that cannot be produced domestically enable domestic firms to diversify and specialize, further enhancing their productivity. Finally, there are also theoretical grounds for both positive and negative causality from productivity to imports.

Literature Review

Raju Guntukula (2018) have studied on - Exports, imports and economic growth in India: Evidence from cointegration and causality analysis. The main objective of study is to Determine relationship between import and export & to measure growth and export promotion strategy, to also determine economic growth in unexplored way. Data was collected from the Handbook of Indian economy and statistics, RBI. All the variables of the study are converted into a natural logarithm. Various tools like unit root, granger, & cointegration were used. The conclusion of study was, export, imports and economic growth are stationary after the first difference form by using ADF and DF test and suggests that both growth as well as export promotion strategy is pursued consistently with an emphasis on sustainable and inclusive growth.

Dr. Sachin N. Mehta (2017) studied on - The Dynamics of Relationship between Exports, Import and Economic Growth in India. The objective of study was to measure export & import relationship including GDP. Data were collected from HAND BOOK OF INDIA (RBI) 2014-15. Test like Stationarity Test, Co-Integration Test & Granger Causality Test were used. The findings of the study were that the unit root tests show that GDP, Export and Import series become stationary when first difference are considered, and evidence of unidirectional causality running from GDP to Export, it means in long term GDP lead to Export but Export does not lead to GDP.

Dr. Vijay Gondaliya & Mr. Paresh Dave (2015) have studied - The Impact Of ExportsAnd Imports On Exchange Rates In India. The main objective of study is to examine whether the import or export effect the exchange rate (USD, EURO, POUND and YEN) in India. Data under this study was time series data , The data were collected from database of Reserve Bank of India and SEBI. Various technique were used like regression analysis, unit root test, granger casualty test. The major findings of this study was positive relationship between export and exchange rate but negative relationship between import and exchange rate. Also, the change in export will influence in positive changes in Indian Rupee against Euro, Pound, Dollar and Yen. But, Import is not positively influence on exchange rate between Euro, Dollar, Pound and Yen.

Sani Hassan Hussaini, Bashir Ado Abdullahi, Musa Abba Mahmud (2015) studied on - A Exports, Imports and Economic Growth in India: An Empirical Analysis. The main objective of the research was to investigate the dynamics of the relationship between exports, imports and economic growth in India using the annual data for the period 1980 to 2013. All necessary data for the sample period were obtained from IECONOMICS and Ministry for Commerce and Industry, Government of India. The variable use for this research was Total Exports by India (EXP), total Import (IMP) and Economic Growth (GDP) i.e. Gross Domestic Product (GDP). The major findings of the research were export causes economic growth which also turns around to cause export and economic reform policies and the shift towards a free market helped the economy to reallocate its resources to productive uses.

László Kónya and Jai Pal Singh (2006) studied on - Exports, Imports and Economic Growth in India. The main objective was to determine Export and/or import and GDP are cointegrated & to Determine Export and/or import Granger cause GDP. The data were collected from several publications and websites, such as the Directorate General of Commercial Intelligence and Statistics, National Accounts Statistics, Planning Commission of India, Reserve Bank of India, and various issues of Economic Surveys. Tools like unit test & cointegration was used. The conclusion of the study was, indirect approach assumes that the variables are stationary or can be made stationary by differencing. It makes use of pretesting for unit roots and cointegration and, depending on the outcomes, testing for causality is carried out with Wald tests in VAR and/or VEC models in levels and/or first differences.

Objective of the Study

1) To examine whether the import and export affect the exchange rate.
2) To study an impact of import export on economic growth of India.

Research Methodology

For the study and analysis purpose secondary data is collected from RBI – Handbook Of Indian Economics & Statistics. The study consider the period from 1980 to 2018. For the study various statistical tools were used like Unit Root Test, Coorelation Analysis and Regression Analysis.

Data Analysis

Table 1. Unit Root Test of Export Data

Null Hypothesis: D(TOTAL) has a unit root				
Exogenous: Constant				
Lag Length: 9 (Automatic - based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-3.953071	0.0051
Test critical values:	1% level		-3.679322	
	5% level		-2.967767	
	10% level		-2.622989	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(TOTAL,2)				
Method: Least Squares				
Date: 01/07/20 Time: 09:41				
Sample (adjusted): 12 40				
Included observations: 29 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TOTAL(-1))	-3.983386	1.007669	-3.953071	0.0009
D(TOTAL(-1),2)	3.074317	0.915162	3.359316	0.0035
D(TOTAL(-2),2)	3.476865	0.924272	3.761732	0.0014
D(TOTAL(-3),2)	3.829584	1.023505	3.741637	0.0015
D(TOTAL(-4),2)	3.512579	1.199637	2.928036	0.0090
D(TOTAL(-5),2)	4.315624	1.333806	3.235571	0.0046
D(TOTAL(-6),2)	6.501437	1.595884	4.073878	0.0007
D(TOTAL(-7),2)	8.009229	2.004628	3.995368	0.0008
D(TOTAL(-8),2)	7.659160	2.124144	3.605763	0.0020
D(TOTAL(-9),2)	3.427889	1.700890	2.015351	0.0590
C	31819.89	16283.10	1.954167	0.0664
R-squared	0.854991	Mean dependent var		11854.65
Adjusted R-squared	0.774430	S.D. dependent var		124387.3
S.E. of regression	59076.79	Akaike info criterion		25.09276
Sum squared resid	6.28E+10	Schwarz criterion		25.61139
Log likelihood	-352.8450	Hannan-Quinn criter.		25.25519
F-statistic	10.61298	Durbin-Watson stat		1.521607
Prob(F-statistic)	0.000012			

Source : Calculated Data

Interpretation

Throughout the export data study researcher found stationarity for the export data series on 1st difference in ADF test and value received from test is 0.0051. The value is less than 0.05 which state that null hypothesis is rejected.

Table 2. Unit Root Test of Import Data

Null Hypothesis: D(SER02,2) has a unit root				
Exogenous: Constant				
Lag Length: 9 (Automatic - based on SIC, maxlag=9)				
			t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic			-2.849008	0.0649
Test critical values:	1% level		-3.699871	
	5% level		-2.976263	
	10% level		-2.627420	
*MacKinnon (1996) one-sided p-values.				
Augmented Dickey-Fuller Test Equation				
Dependent Variable: D(SER02,3)				
Method: Least Squares				
Date: 01/07/20 Time: 10:01				
Sample (adjusted): 1993 2019				
Included observations: 27 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(SER02(-1),2)	-6.710237	2.355289	-2.849008	0.0116
D(SER02(-1),3)	5.329101	2.303094	2.313887	0.0343
D(SER02(-2),3)	4.487181	2.230244	2.011969	0.0614
D(SER02(-3),3)	3.991136	2.135782	1.868700	0.0801
D(SER02(-4),3)	3.275579	2.033481	1.610824	0.1268
D(SER02(-5),3)	2.384779	1.971250	1.209780	0.2439
D(SER02(-6),3)	3.103443	2.064970	1.502900	0.1523
D(SER02(-7),3)	4.371817	2.157579	2.026260	0.0597
D(SER02(-8),3)	6.718014	1.998754	3.361101	0.0040
D(SER02(-9),3)	5.949690	1.671285	3.559950	0.0026
C	39571.90	33754.67	1.172339	0.2582
R-squared	0.868085	Mean dependent var		6425.593
Adjusted R-squared	0.785638	S.D. dependent var		266503.7
S.E. of regression	123389.3	Akaike info criterion		26.57564
Sum squared resid	2.44E+11	Schwarz criterion		27.10358
Log likelihood	-347.7712	Hannan-Quinn criter.		26.73262
F-statistic	10.52900	Durbin-Watson stat		2.498047
Prob(F-statistic)	0.000028			

Source : Calculated Data

Interpretation

Throughtout the import data study researcher found that there is stationarity on level, 1st difference as well as 2nd difference but value for the 2nd difference is near to 0.05 which is 0.0649. The value is more than 0.05 which state that null hypothesis is accepted.

Table 3. Group Unit Root Test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	3.52272	0.9998	2	65
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.45551	0.0070	2	65
ADF - Fisher Chi-square	13.5006	0.0091	2	65
PP - Fisher Chi-square	10.4166	0.0340	2	74

Source : Calculated Data

Interpretation

In group unit root test for import and export data series Pesaran test, ADF test and pp- fisher test researcher able to find stationarity, which is respectively 0.0070, 0.0091 and 0.0340. Which state that there is a positive relation between import and export.

Table 4. Correlation Between Import, Export & Exchange Rate

	Column 1	Column 2	Column 3
Column 1	1		
Column 2	0.997571	1	
Column 3	0.818676	0.804922	1

Source : Calculated Data

Interpretation

In correlation test the researcher found that there is a relation between import, export and exchange rate as the figure itself shows i.e., 0.818676 and 0.804922 which state that there is relation between import, export and exchange rate.

Table 5. Regression Analysis of Export

Regression Statistics	
Multiple R	0.804922251
R Square	0.64789983
Adjusted R Square	0.63838361
Standard Error	11.01472932
Observations	39

Anova					
	Df	SS	MS	F	Significance F
Regression	1	8260.209	8260.209	68.08373238	0.000000000656
Residual	37	4488.998	121.3243		
Total	38	12749.21			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	26.24694509	2.215935	11.84463	0.000000000000037469	21.75703345	30.73686	21.75703	30.73686
X Variable 1	1.34795E-05	1.63E-06	8.251287	0.000000000655559343	1.01694E-05	1.68E-05	1.02E-05	1.68E-05

Source : Calculated Data

Interpretation

In regression analysis of export data researcher found that the variable that is exchange rate which is dependent on export of goods and services. As the data state that there is positive relation between exchange rate and exports**.** The exchange rate has an effect on the trade surplus (or deficit), which in turn affects the exchange rate and hence a strong domestic currency hampers exports and makes imports cheaper.

Table 6. Regression Analysis of Imports

Regression Statistics	
Multiple R	0.818675913
R Square	0.67023025
Adjusted R Square	0.661317554
Standard Error	10.65972791
Observations	39

ANOVA

	Df	SS	MS	F	Significance F
Regression	1	8544.904	8544.903719	75.1994968	0.00000000019203
Residual	37	4204.303	113.6297992		
Total	38	12749.21			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	25.76092862	2.165413	11.89654152	0.000000000000032934	21.37338465	30.14847	21.37338	30.14847
X Variable 1	2.0814E-05	2.4E-06	8.671764342	0.0000000001920296907	1.59507E-05	2.57E-05	1.6E-05	2.57E-05

Source : Calculated Data

Interpretation:

In regression analysis of import data researcher found that the variable that is exchange rate which is dependent on import of goods and services. As the data state that there is positive relation between exchange and imports. The exchange rate has an effect on the trade surplus (or deficit), which in turn affects the exchange rate and hence a strong domestic currency hampers Imports and makes exports cheaper.

Findings

From the whole study, followings are the findings:

Unit Root Test :
Unit-Root Test, there is positive relationship between import and export, and there is a stationarity for export data and import data. There is relation between import and export, when researcher found group unit root test researcher has able to find stationarity, which also state that there is positive relation between import and export.

Correlation :
According to correlation analysis researcher found that there is relationship between import, export and exchange rate. As exchange rate is dependent variable and have relationship with import and export.

Regression Analysis :

According to regression analysis researcher found that the dependent variable i.e., exchange rate is depended on exports and imports of goods and services and also have positive relation between them.

Conclusison

The recent study is striving to determine relationship between import and export and relationship of import and export with exchange rate. The determinant or variable used under this study was exchange rate. Throughout the study three test or analysis have been performed that is Unit Root Test, Correlation & Regression. The researcher found that there is relationship between import and export and those with exchange rate too.

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