AN ECONOMETRIC STUDY OF EXPORT OR IMPORT LED GROWTH HYPOTHESIS IN INDIA

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PURPOSE
THIS paper aims at examining short run and long run relationship among GDP, export and import in India for the study period 1991-2018 using annual data, various econometric tools are employed to analyse whether there is association among the variables in the time series data or not.

Design/Methodology/Approach: *Unit root test has been applied to test the stationary of the data in the time series which find variables stationary at first level. Johansen's Co-integration test has been used to determine the long run common path among the variables which infers one Co-integration equation. AIC and SC are used for the selection of lag length criteria, while VECM test infers long run association among the variables but statistically insignificant.*

Findings: *It is suggested to the policy makers and government of India to promote economic activities and pursue diversification in commodities and market along with trade integration for the expansion of export and continue importing necessary raw material for value addition and needed technology to expand the capacity to improve productivity. Granger causality exhibits short-run unidirectional causality from GDP to export while bidirectional causality exists between import and GDP and there exists no directional causality between export and import in India.*

Research Limitations: *The data have limitations as it is only for the period 1991-2018. Data is restricted only to secondary sources.*

Managerial Implications: *This research would provide an impetus to the the policy makers and government of India to promote economic activities in the country.*

Originality/Value: *There has not much studies in this area.*

Key Words: *Export Led Growth, Import Led Growth, Co-integration, VECM, Granger Causality, Economic growth in India..*

Introduction

The world has experienced an upward trend in economic performance over the past four decades. International trade, whether bilateral trade or with trade blocs among developed, developing or under-developed countries, plays prominent role in shaping any country economy especially in developing nations. Different international bodies like IMF, WTO, World Bank and others, took numbers of productive steps, to favour trade openness for boosting economic growth. As being one of the prominent

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emerging nation in the world, India understood the importance of open international trade and adopted the Liberalisation, Privatisation and Globalisation (LPG) in June, 1991 by executing trade Liberalisation policy. To see the impact of trade openness in India from 1991 to 2018 in economic growth and to test the trending hypothesis of export-led-growth (ELG) promoted by neo- classical economist (Bhagwati, 1978) works effectively in Indian scenario or not? There are 'n' numbers of sound researchers, institutes, policy framer etc., which support that by free trade market, developing nations got assistant in overall economic growth in their nations. Contrary to this others has the opinion that developing nations rather concentrate on protecting home industries from outside industries and concentrate on promoting their home industries that will provide as road map for economic upliftment (Mishra, 2011).While it is also argued that increase in trade led to more income and more income facilities more trade(Bhagwati, 1978). Upliftment in export could also assist in having a comparative advantage over other nations in which the country possesses upper hand in some specialised sector (Kunst & Marin, 1989). Diversification in exports could increase the productivity of a country by offering larger scale of economies and the merging the global market with the national market (Elhanan Helpman & Paul Krugman, 1985). ELG leads to higher production of goods and services with quality control, assist in economies of scale, encourages employment generation, technological upgradation, increase in economies efficiency, labour training, well organised management system (Feder, 1983).Adding to this export also help in generating foreign exchange to the exporting nation and assist in acquiring knowledge in respect to latest foreign technology and production skills, prevailing market trend, culture (Grossman & Helpman, 1991).

While other side of the same coin, another peer of economist's advocates that, India has been described as an import substituting country in which import plays a decisive role in India's growth (Xu, Guo, Liang, & Yu, 1996). Import led growth (ILG), suggest that increase pattern of imports could be an important engine in driving the economic growth of a country by providing home industries with the latest and upgraded abroad technology packages which work as an intermates productions factors (Coe, Helpman, & Hoffmaister, 2009). It also serves as a moderating factor by providing the upgraded research and development (R&D) acquired competent knowledge and latest skill from the skilled (developed)nations to the unskilled or semi-skilled nations (developing or under-developed) nations (Mazumdar & Papatla, 2000). In present Indian economy scenario since the post liberalisation period and import led growth (ILG) theory has been found significantly active in uplifting India's growth. While some other group of economists also support the existence of bi-directional causal relationship between export and GDP; these economists has the opinion which favours trade openness and consider it as one of the foremost options for boosting economic activities and increasing economic efficiency across the world (Shan, Morris, & Sun, 2001). Further adding to this adoption of new policies assist Indian government to bring down trade barriers, which helps in trade restriction and to facilities to play a part at international magnitude (Manmohan Agarwal & John Whalley, 2013). India's success story has been based on the pillar of both export-led growth and import-led growth with application to the latest high-tech techniques from globalisation.

This has been a topic of research for a long time whether export or import through trade openness policy assists in rapid development of an economy or not? In context to Indian economy the turning point towards globalisation took place in 1991 when Indian economy were facing critical problem of balance of payment crisis and in the same year LGP policy were adopted which come up as a rescuer for Indian economy. To check the robustness of different side of theory that favoured Export-Led Growth (ELG) or Import-Led Growth (ILG), especially in one of fastest developing countries like India, this paper has been framed which attempts to check the robust of both the theory in Indian economy prospective after economic openness since 1991.

Review of Literature

Love and Chandra (2005) examined the export and GDP of Pakistan (1970-2000), Bhutan (1980-1997) Maldives (1977-2000) and Bangladesh (1973-2000) using Co- integration and Error Correction

Modelling. It was found that in India, Maldives and Nepal there exists a positive association between export and GDP which indicates Export-Led Growth (ELG) found positive exhibits in these countries. On the other hand, in Bangladesh and Bhutan shows inverse relationship.

Shirazi and Manap (2005) investigated the ELG in south Asian nations which includes India, Pakistan, Bangladesh, Nepal and Sri Lanka by employing Co-integration, VAR model with multivariate granger causality test by employing Toda and Yamamoto Model. Where output supports the long run association among the GDP, Export and Import in every country except Sri lanka adding to this the result support the ELG hypothesis for, Nepal Pakistan and Bangladesh but not support the same for Sri lanka and India.

Sharma and Panagiotidi (2005) re-investigated the hypothesis of Export Led Growth (ELG) during 1971- 2001in Indian perspective, by employing Johansen cointegration test and granger causality. The result doesn't not favour the ELG hypothesis in the study period in-spite of economy reforms in 1991 India still retains some characteristic of an import substituting economy but study also reveals that Indian economy does support ELG hypothesis in the 1980s period.

Awokuse (2006) analysed individually the ELG and ILG theory in Bulgaria, Czech Republic and Poland by using multivariate cointegrated VAR method. The result support both Growth Led exports (GLE)as well as Export Led Growth (ELG)theoryfor Bulgaria, while Czech Republic favours the existence of ILG and ELG theory in difference to other result Poland support only the ILG hypothesis in the study period.

Mishra (2011) reinvestigated the hypothesis of Export-Led Growth (ELG) in India during the period from 1970-2009 using Co-integration, VECM from the defined time series econometric tools. The study supports a long-term causal association between export and Gross Domestic Product (GDP) further VECM found positive linkage with supported by Granger Causality and rejected the null hypothesis of ELG.

Agarwal (2014) consider the role of export in India's economic growth and categorized impact of export in economic growth in two parts i.e., pre- liberalisation (1960-1991) and post- liberalisation period (1994-2012). Result suggest that export and GDP were not co-integrated by themselves but they do co-integrated when an additional variable Real Effective Exchange rate (REER) were taken into consideration. In pre-liberalisation period export doses not led to growth rather output produced in India determine export but post- liberalisation period shows bidirectional relationship between exports and non-exports GDP and ELG found weaker even in post-liberalisation period.

Debnath et al., (2014) analysed does GDP is led by export by differencing them into exports and non-exported GDP for the period 1981 to 2012 by applying the ARDL approach to check the potential long run-equilibrium. The analysis reveals that at mass level export does not proof to be a determining factor to affect the output of other sector or ELG hypothesis does not found significant at mass volume in India, while at disaggregate exports in terms of merchandise and services export were found positive impact but statistically insignificant.

Venkatraja (2015) tested the ELG hypothesis in India for the study period of (1970-2013) using Econometric model and found prevalence in long-term equilibrium association between export and economic enhancement. Whereas, VECM models estimates at lagged value (1) of GDP determine the contemporary value of export and vice-versa. Granger causality test shows there exists unidirectional relationship i.e., export cause GDP.

Gupta and Singh (2016) investigated the cause-and-effect relationship between FDI and GDP among the BRICS countries by employing co-integration, VECM and Granger Causality. Result suggest there

prevails long term relationship from GDP to FDI only in India, Brazil and China and short run causality between FDI and GDP in China whereas, South Africa and Russia don't have any long run causality. VECM model and Granger Causality test suggest in case of India, Brazil and China higher GDP rates leads to higher inflow of FDI and it is contradicting in case of South Africa and Russia.

Rani and Kumar (2018) examined the performance of BRICs and linkage among growth, imports and exports with reference to South Africa, India and Brazil countries employed by panel data for the consideration period 1967-2014. The output supports the existence of long-term association with the specified variables, while FMLOS and DOLS output supports gross capital formation and export are positively related by economic development, whereas as import association with economic growth found negative and significant. Granger causality suggests bidirectional causality between ELGand GLE hypotheses.

Sehrawat and Giri (2019) investigated the role of globalisation, institutions on the economic performance of Indian economy using unit root test (saikkonen and Lutkepohl), cointegration test (Bayer-Hanck), ARDL model to check the robustness and granger causality. Major finding suggests that there exists cointegration among the variables, whereas ARDL model suggest that globalisation and institutions positively contributes towards Indian economy, granger causality does not reciprocate the same it reveals that institutional ability does not alter economic growth in short-term.

Objective of the Study

1. To assess the long run and short run interdependence among the variables.
2. To analyse the causal association among the variables in short term.

Hypotheses

The null hypotheses of the study are mentioned below:

$H_{1:}$ There is no co integration among Import, Export and Gross Domestic Product (GDP).

$H_{2:}$ There is no short-run and long- run causality among the variables.

Research Methodology

The study includes the secondary data for the period starting 1991 to 2018 collected from the world bank indicators. The focus of the study is to assess long term and short-term interdependence as well as directional causality between the independent and dependent variables. The independent variables for the study were export and import of India while the dependent variable was GDP of India. For analysing the data, econometric tools like unit root test with support of ADF, Johansen test of Co-integration, Vector error Correction Model (VECM) and Granger's causality test were used. Augmented Dickey Fuller (ADF) test of unit root was done both at intercept as well as trend and intercept at levels and first difference. While Johansen co-integration test was run to check whether there are long run variables follow the same path or not? Vector Error Correction Model (VECM) was used to analyse the probability of long run equilibrium of the model and how much the variables affect each other in long run. For assessing the direction of short run causality between GDP, export and import of India, Granger's causality model was applied. After fitting the model, robustness of the model was used verifying serial correlation and normality of the model.

Unit Root Test

The empiric work is basically a times series working data; the first assumption of a time series data works upon that the observed data should be static or stationary. Here, unit root tests are used to establish stationary properties of the observed data or we can say to access if mean is equal to one or a unit and that the variance is sustained. The data is said to be stationary when data

mean and variance are constant over the study period and the value of covariance at different time period were found dependent only on the distance or lagat different time period and not on the actual time at which the covariance is compiled (Gujarati and Sangeetha, 2007). In order to check whether the data is stationary or not? If the data is stationary at what levels? In order to get these answers Augmented Dickey-Fuller (ADF) (1979) test is used. ADF test is the modified version of Dickey-Fuller (DF) test, since the DF test assume that the error term is not correlated, in case the error is correlated than the modified ADF test will work more effectively (Gujarati and Sangeetha, 2007). This test is more favourable since its facilities higher-level autoregressive stages for reverifying stationarity of the observed data. The test uses the following equation.

$\Delta yt = \alpha + \beta t + \lambda y_{t-1} + \ldots\ldots\ldots + \delta_{p-1} \Delta y_{t-p+1} + \square_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$

where, α is a sustained or constant, β the coefficient time series data trend, p is the lag order selected for autoregressive stages and $\square$ is white Gaussian random error term. Imposing the constraints that $\alpha = 0$ and $\beta = 0$ corresponds to modelling a random walk. Whereas using the constraint that $\beta = 0$, corresponds to modelling a random walk with a drift and using the constraint $\alpha = 0$, corresponds to modelling a random walk with time trend.

Johansen's Co-integration Test

If the Unit root test (using ADF test in our case) exhibits that all the dependent and independent variables in the time series data is found stationary, the next step is to check whether there exists any long run relationship among the variables or not (GDP, Export and Import). Johansen cointegration test is implied to check the possible existence of long -run relationship among the economic variables. Johansen framework for co-integration is a multivariate unit root test which valuate the co-integration (rank *r*) in the multivariate case and to estimate the parameters of co-integration relationship (Nkuma-Udah et al., 2013) to examine the co-integration among GDP, Export and Import, Johansen's co-integration (1988) test is used. In the Johansen framework the following system is estimate.

$$\boldsymbol{Xt = \alpha + \sum_{j=1}^{p} \beta j \; Xt - j + et} \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

where, Xt is an n×1 vector of non-stationary I(1) variables, a is an n×1 vector of constants, p is the maximum lag length, âj is an n×n matrix of coefficient and et is a n×1 vector of noise terms. The coefficient value (â) indicates the degree of co-integration, while the sign preceding to the coefficient indicates whether the long run relationship between the variables is positive or negative associated. In order to decide the appropriate model, to study johansen co-integration test and to test the hypotheses H_0: r =0 versus $H_{1:}$ r + 1‴0 trace and maximum eigen value statistics are used in verifying theses hypotheses.

Vector Error Correction Model (VECM)

Johansen's co-integration test reflects only one side of a coin among the variables i.e., whether there is any relationship among the specified variables or not. One of the trending techniques to ascertain the direction of causation among the variables is Vector Error Correction Model (VECM). Adding to this VECM also assist in identifying and measuring the speed of adjustment among the variables and helping to recover from the temporary shock, outlier or disequilibrium to maintain the long-term association among the variables during the period data obtained or we can say, it also assists in measuring speed or time taken in convergence to the long-term steady state of equilibrium. In our case the dependent variables (GDP) and independent variables (Export, Import) have co-integration, then Vector Error Correction Model (VECM) is used to check whether there is

long run association among the dependent (GDP) and independent variables (Export and Import). Thus, the Johansen co-integration equation (2) has pivoted into a vector error correction equation as follows.

$$\Delta Xt = \sum_{j=1}^{p=1} \tau j\, \Delta xt - j + \pi\, xt - p + et \quad \text{.....(3)}$$

Where Äis the first difference operator, τj is – $\sum_{j=1+1}^{p} \beta j$ and π is equal to -1+ $\sum_{j=1+1}^{p} \beta j$

While, assumption of VECM model is that it automatically converts the data stationary at first difference, so the 'D' in the VECM equation stand for the automatic first difference of the variables, whereas the lag length has been determined by the Schwarz Information Criterion (SC)Akaike Information Criterion (AIC) and HQ: Hannan-Quinn Information criterion (-1) and (-2) in the variables are lag(1) and lag(2) respectively.

Granger Causality Test

After it is confirmed that the dependent and independent variables are co-integrated with each other in long run/ short run. Next step is to check how much a dependent variable is helpful in determining independent variables or vice versa, to check the causal relationship among the variables Granger Causality Test (1969,1988) is widely used. Granger Causality Test assist in determining whether previous/last value of a variables can assist in predicting changes in another variables or adding to this we can say Granger Causality Test assist to measures the data provided by one variable(dependent/independent) in illustrating the current value of another variable (dependent/ independent). Granger Causality Test also assist in determining the direction of causal relationship among the variables i.e., unidirectional or bidirectional.

$$\Delta GDP = a_1 + a_{GDP}\theta_{t-1} + a_{11}\Delta\theta GDP_{t-1} + \beta_{11}\Delta export_{t-1} + \gamma_{11}\Delta import_{t-1} + \varepsilon_{1t}\ldots$$

.....(4)

$$\Delta export = \beta_2 + \beta_{export}\theta_{t-1} + \alpha_{21}\Delta GDP_{t-1} + \beta_{21}\Delta export_{t-1} + \gamma_{21}\Delta import_{t-1} + \varepsilon_{2t}\ldots.$$

.....(5)

$$\Delta import = \gamma_3 + \gamma_{import}\theta_{t-1} + \alpha_{31}\Delta GDP_{t-1} + \beta_{31}\Delta export_{t-1} + \gamma_{31}\Delta import_{t-1} + \varepsilon_{3t}$$

.....(6)

Major Findings

Unit Root Test

The unit root test was done to examine the stationary of the data. In table-1, the series of the variables were tested to check the stationary of data through both way intercept and trend and intercept. At level all the three variables GDP, Export and import were found non-stationary both at intercept as well as trend and intercept, further the data were tested at first difference and the data were showing stationary behaviour at first difference with significant p-values. These p-values

at intercept for GDP, export and import were 0.0063, 0.0016 and 0.0044 respectively, with significant value at 5 per cent level of significance whereas trend and intercept also reflect similar result with the p-value of 0.0016, 0.0074 and 0.0175 for GDP, export and import respectively at 5 per cent level of significance.

Table No. 1: Augmented Dickey-Fuller test of unit root

Series/ Variables	At Level			At first difference		
	Intercept (p-value)	Intercept (p-value)	Decision	Intercept (p-value)	Trend and Intercept (p-value)	Decision
GDP	1.0000	0.9191	Non-Stationary	0.0063**	0.0016**	Stationary
Export	0.9632	0.5963	Non-Stationary	0.0016**	0.0074**	Stationary
Import	0.9655	0.5998	Non-Stationary	0.0044**	0.0175**	Stationary

Source: Author's calculation using E-views 10.

***rejection of null hypothesis at 5% level of significance.*

Table No. 2: Johansen Cointegration test result

H_0	H_1	Trace Statistics	5% Critical Value	p-value	Maximum Eigen Value	5% Critical Value	p-value
r =0	r =1	55.03919	29.79707**	0.0000**	44.85713	21.13162**	0.0000**
rd"1	r=2	10.18206	15.49471	0.2670	9.848574	14.26460	0.2221

Source: Author's calculation using E-views 10.

r denotes the number of co-integrating vector in the long run.

***rejection of null hypothesis of co-integration rank r at 5% level of significance.*

Since the variables were non-stationary at level and become stationary at first difference so both the condition to test Johansen Cointegration test were fulfilled. In table no. 2, Johansen cointegration test unrestricted cointegration rank test (Trace Statistics and Maximum Eigen value) were examined and it illustrate that there exists one co-integrating equation among the variables or we can say that all three variables GDP, export and import have long run association and in long run they move together or follow a common long-run path. As, r = 0 null hypothesis (H_0), no cointegration among variables has been rejected as the p-value is 0.0000 and the trace statistic> critical value (55.03919>29.79707) alternative hypothesis (H_1) there exists one co-integration equation among variables is accepted. On the other hand, Johansen cointegration test unrestricted cointegration rank test (maximum eigen value) also justifies the same as trace test that there exits one cointegration equation among dependent and independent variables, p-value were 0.0000* as r = 0 null hypothesis was rejected, whereas max eigen value > critical value (44.85713 > 21.13162) which also indicates rejection of null hypothesis (Ho) and acceptance of alternative hypothesis (H_1) there exists one co-integration equation among variables is accepted. However, the null hypothesis of at most one cointegrating equation cannot be rejected to favour the r = 2 Thus, Johansen Cointegration test denotes that the null hypothesis $H_{1:}$ There is no Cointegration among variables i.e., GDP, Export

and Import in rejected at 5% level of significance and the empirical result support the one cointegrating equation among all the variables.

Vector Error Correction Model (VECM)

Table No. 3: Lag Value Selection

Lag Value Selection

Lag	AIC	SC	HQ
0	158.6035	158.7487	158.6453
1	153.7940	154.3746	153.9612
2	152.0549*	153.0710*	152.3475*

AIC: Akaike Information Criterion, SC: Schwarz Information Criterion, HQ: Hannan-Quinn Information criterion.

*Notes: * Selected lag order by the respective criterion.*

Table No. 3 exhibits the process of selecting the lag value through the Vector Auto Regression (VAR) lag order selection criteria using three popular different computing techniques all the respective techniques favours the selection of lag value at 2 lag which further leads to the process employing the VECM model in a more robust form.

Table No. 4: Vector Error Correction Model (VECM) Equation-

D(GDP) = C(1)*(GDP(-1) + 1092129.58994*EX(-1) – 5557993.56891*IM(-1) – 97212969626.3) + C(2)*D(GDP(-1)) + C(3)*D(GDP(-2)) + C(4)*D(EX(-1)) + C(5)*D(EX(-2)) + C(6)*D(IM(-1)) + C(7)*D(IM(-2)) + C(8)

Dependent Variable: D(GDP)

Sample (adjusted): 1994-2018

Vector Error Correction Model (VECM)

	Coefficient	Std. Error	t-Statistic	Prob.
C (1)	-0.049099	0.108314	-0.453305	0.6561
C (2)	0.501047	0.209173	2.395369	0.0284
C (3)	0.515524	0.304643	1.692224	0.1088
C (4)	0.25167	2.506526	0.100406	0.9212
C (5)	-5.330871	2.42957	-2.194163	0.0424
C (6)	-1.833055	1.543791	-1.187372	0.2514
C (7)	2.880927	1.286398	2.239529	0.0388
C (8)	5.03E+10	3.06E+10	1.641269	0.1191

Source: Author's calculation using E-views 10.

From the VECM result, it can be inferred that Coefficient of (1) [C(1)*(GDP(-1) + 1092129.58994*EX(-1) - 5557993.56891*IM(-1) – 97212969626.3)] is the error correction term or in other words we can say it is speed of adjustment towards equilibrium. As the assumption of the VECM model in the long run causality is that the coefficient of the co integrating model i.e., C (1) must be negative and

p-value must be less than 0.05 (<0.05) to established a statistically significant long run relationship among the dependent and independent variables (in our case GDP as dependent variable and import and export as independent variables). Even the C (1) is negative which reflect there is long run association from export and import towards GDP but statistically p-value reflect it is insignificant or in layman language we can say a combined increase in export and import by 1 percent there will be an increase of 0.048 percent every year in GDP which is statistically insignificant. Whereas, the coefficient of export C (5) towards GDP reveals that in long run export negatively impact over India's GDP with -5.330871 percent every year in a significant manner, on the other hand the coefficient of import C (7) towards GDP reflect import assist in growth of Indian economy in the long-run path and with positive impact over GDP with 2.880927 percent every year and statistically significant.

Table No. 4: Granger Causality Test

Sample 1991-2018

Lags: 6

Null Hypothesis	Obs.	F-Statistic	Prob.	Decision
EX does not Granger Cause GDP	22	3.03791	0.0656	Accept
GDP does not Granger Cause EX		12.8885	0.0006*	Reject
IM does not Granger Cause GDP	22	3.77398	0.0368*	Reject
GDP does not Granger Cause IM		10.4876	0.0012*	Reject
IM does not Granger Cause EX	22	2.38356	0.1165	Accept
EX does not Granger Cause IM		2.62412	0.0937	Accept

Source: Author's calculation using E-views 10.

**denotes rejection of null hypothesis.*

From the VECM we confined the existence of long run causality among the variables and to test the short run direction we used the granger causality test. From the result it is clear that there exists causality in short run between GDP and export, but does not exists causality between export and GDP which support the hypothesis of Growth Led Export (GLE) but does not support the hypothesis of Export Led Growth (ELG). In nutshell, the result indicates a unidirectional causality between GDP and export in short run, or we can say GDP will assist in predicating the next year export but export will not help in forecasting next year GDP. Contrary, there exists causality between import and GDP and even exists causality between GDP and import and we can say both GDP and import has bidirectional causal association in short run which favours the existence of both the hypothesis Import Led Growth (ILG) and Growth Led Import (GLI) for the case of India. On the other hand, there is no directional causality between import and export. It implies neither import nor export effect each other in the short run. While, Schwarz Information Criterion (SC) suggest the selection of 6 lag value for the Granger causality test to determine the short run direction.

Conclusion

This paper re-investigated the export/import led growth hypothesis in India after the post liberalisation period from 1991 to 2018 through unit root test by checking the stationarity of the data by using Augmented Dickey Fuller (ADF) test, Johansen Co-integration test were employed to examine the long run Co-integration among the variables, and further VECM model were performed to check the speed of adjustment towards equilibrium in long run path while multivariate Granger Causality tests were performed to examine the short-run direction among the variables.

Result of unit root test, revealed the stationary of the variables i.e. GDP, export and import at first difference [I (1)] using ADF test for both at intercept (without trend) and trend and intercept (with trend) levels, Johansen Co-integration confirms the long-run equilibrium relationship among these three variables. The empirical results of both the trace and max-eigen statistics suggest the existence of one long-run equation among all three variables i.e., GDP, export and import. Similarly, Vector Error Correction Model (VECM) finding suggests the existence of a long run relationship between GDP, export and import but statistically insignificant manner while import plays more prominent role in determining Indian economy growth as compare to export towards GDP of India or ILG hypothesis works more effectively in Indian scenario. Granger Causality tests finding also provide strong evidence against the ELG hypothesis in Indian growth scenario but empirical finding does favour the existence of growth led export (GLE) hypothesis. In contrast, the study finds strong evidences favouring the existence of ILG hypothesis and exhibits bidirectional causal relationship between import and GDP which support the finding of Jung and Marshall (1985), Xu (1996), Anwar and Sampath (2000) and Pradhan (2007) which oppose the ELG hypothesis in India. Further, adding to the finding the study also reveals that there is no-directional relationship between export and import both in short and long run path.

Some suggestion for the policy implications from the empirical results like export promotional activities as a significant tool for expanding economic development and could be moderately effective if import tariff is maintained and government should also promote economic and trade integration for the expansion of export with accelerating rate. While, import openness is also worked as a significant tool in respect to Indian economic upliftment as its accompaniment the role of exports by carry out as a supplier of intermediate production process needed in export sector and government should also pursue diversification in exports in terms of both commodities and market further continue importing required raw material to work as a assets for the domestic firm and facilities with needed technology to expand the capacity to improve productivity to ensure stabilise contribution towards growth.

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