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**EVIDENCE OF EXPORT LED GROWTH (ELG) HYPOTHESIS THEORY IN
INDIAN MANUFACTURING SECTOR AND A SOURCE OF FDI**

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ABSTRACT

The highly discussed topic among the economists from the last 2 decades, is the association between Exports, Economic growth and Foreign Direct Investment. Many economists have claimed that the growth in exports have a dominant role played in improving economies of scale, reaching new markets, innovations, and thus in attracting capital. There are studies which support the relationship between the increase in Export attracting Capital. Export Led Growth Hypothesis (ELGH) is a theory which supports the impression of Exports in Economic growth. This study is a work done to verify the same ELGH theory for Indian Economy. The study has been conducted for a period of 1998 to 2018 and using simple linear regression model, we have been able to find the significant influence of Exports on growth of economy. The key manufacturing sectors contributing to GDP have been identified and the need for policy frameworks, and focus required on specific manufacturing sectors have been identified. The study further aims at finding a relationship between the exports and FDI in India.

Introduction

The Neo classical Economists proposes that the exports mark a remarkable impact on the country's growth. The researchers across the world have explored the link amid the "exports and the economic growth of a country". The growth in exports have led to increase in the scale efficiency, to cater to the foreign demands. Which in turn leads to innovation in products through enhanced research and development activities, attracting investments, and reaching new markets for business expansion. Increase in the global trade helps in boosting free trade policies among the countries

and hence attracts investment from other countries in to the local and domestic industries. This flow of capital into the domestic country supports the two-way growth of the economy.

While there are few economists, who have a conflicting opinion that, the economic development in a country is a cause for increased exports (Dar et al., 2013). The growth in the economy leads to increase in the quality of manufacturing the product, the companies start working with more efficiency and thus develops the skills of the employees and boosts the technology adopted. As the countries achieve low cost manufacturing, it will achieve comparative advantage. Increases the exports. Thus Growth Led Exports define the influence of economic growth on improving the exports. That is, as the country improves their economic performance, it will create opportunities for new entities to emerge, investments opportunities increase and the exports will grow.

Economists across the world have focused their discussion on the relationship between “the exports and economic growth”. The discussion is further fuelled by strategic moves taken up by the developing economies to adopt globalisation. The economists have successfully constructed these two theories to support the discussion, they are - “the Export Led Growth and Growth Led Hypothesis”. As said earlier the theory of Neo Classical economists on role of exports in enhancing the economic condition, defines the Export Led Growth Hypothesis.

Most of the studies referred, have been carried out on the topic of role of exports on the economic growth during the last few decades. The early studies have largely concentrated on the usage of cross section approach, Simple correlation coefficient and causality tests to find evidence for ELG theory (FEDER, 1982; Ram, 1985). The relationship between “exports and Economic growth” has also been studied for an inter-country association, through cross section for number of countries.(Tyler, 1981). The other country specific studies on export led growth hypothesis like (Abual-Foul, 2004; Chandra Parida & Sahoo, 2007; Li & Manap, 2005; Shan & Sun, 1998b; Siliverstovs & Herzer, 2006) have observed the association between “the export growth and economic growth”.

There are many empirical studies, which debate on the acceptance of ELG Hypothesis. Studies are found in support of an existence of relationship between the two, whereas some papers deny any association between them. These results are unexpected in view of the existing strong analytical opinions in favour of the ELG Hypothesis(Agrawal, 2015). Further there is (Balassa, 1978), in their paper stated that, Trade orientation has been an important factor to contribute to income growth of different countries. It also substantiated the results stating that, increase in the income levels are achieved at a lower investment costs in the countries.

There are several studies conducted to state the association between the exports, FDI and Growth of an economy(Tiwari & Mutascu, 2011; Wei & Liu, 2006; Yao, 2006; Zhang & Song, 2001). Apart from the association, the studies define the influence of Exports on inward flow of FDI as well discusses the role of inward FDI on economic growth. there are studies which connects the exports and inflow of FDI together to have influence on countries growth.

In 1991, The Government of India introduced ‘New Policy Reforms’. The main attention of these reforms were on trade, foreign investments, tariffs and taxes. The objective was to emphasize on liberalisation of trade policies, openness and export

promotion to heighten exports (Kumari & Malhotra, 2014). (Bhattacharya & Bhattacharya, 2011) investigates the interrelationship among the manufacturing exports, economic growth and FDI for India. The author has tried to investigate the relationship between the merchandise trade, FDI inflows and Growth of the economy using the VAR model. The study results confirmed the existence of significant effect of FDI on enhancing the capital formation and results in growth of economy. And suggested that strong policy reforms and a political mandate will improve the growth of the country by enhancing the exports. Consequently, the purpose of this paper is to study the manufacturing exports performance in India and its contribution to the economy of the country. The paper also continues its study to identify the role of key export oriented products under manufacturing sector on economic growth. In order to compare the policies implemented by the government to encourage the specific manufacturing exports. The analysis is different from the above mentioned studies in these ways: (i) the study is specific to India unlike a cross country comparison as mentioned earlier. The and Indian Manufacturing exports have witnessed three decades post the implementation of policy reforms. (ii) The study specifically deals with manufacturing exports. and to arrive at comparison of policies, only a selective number of manufacturing exports have been considered. (top contributors to manufacturing exports based on weightage); and (iii) the study has inspected the long term association amongst the exports, FDI and economic growth. This paper analyses the Indian prospects for economic growth by comparing the manufacturing exports with GDP of the country. Section 2 discussed the review of literatures considered for developing the article. Section 3 refer to the Data collection and Analysis. Empirical results are expressed in section 4. Section 5 summarises the findings of the study.

Literature Review

There are large set of studies conducted to analyse the role of ELG hypothesis on economic growth of the countries. The authors have considered the relationship between “the exports and economic growth” with simple correlation coefficient analysis, causality and cointegration analysis using VAR models (Bleaney, 1993; Narayan et al., 2007; Shafiullah et al., 2017; Shan & Sun, 1998a).

(Li & Manap, 2005) has studied the presence of ELG Hypothesis theory for five South Asian Economies. The author used the Cointegration test and multivariate Granger causality tests. In this study the author was able to confirm the existence of a long - term relationship between exports, imports and outcomes of every country except Srilanka.

Using panel cointegration methods with non-export GDP as the dependent variable for 45 developing countries, (Dreger & Herzer, 2013) found, Exports have a bi-directional causal relation between “the exports and Non – export GDP” and a negative relation between the same. There is a study which create a causal link between exports and productivity, using an econometric analysis for a panel data (Marin, 1992) and found that an "outward-looking" rule supports the output performance of developed market economies as well as that of developing economies.

(Rod Erfani, 1999) stated that, The causal association between economy and

exports of eight Asian developing countries has been studied using cointegration and error-correction models to evaluate the association between “export growth and economic growth”. The study has been conducted for the data from 1960 to 1997. this article also provides strong confirmation in support of the ELG hypothesis. The results are bi- directional and states that, the ELG and GLE hypothesis exists among these countries.

Then there are further group of studies conducted to measure the role of exports on economic growth of various countries. A cross country analysis and comparison of ELGH was conducted by (Chandra Parida & Sahoo, 2007; S. Lall, 2000; Li & Manap, 2005; Narayan et al., 2007; Wicksell, 1981) to study the role of exports on the economic growth of these countries. While there is also a study conducted by (Shan & Sun, 1998b) specify a bidirectional causality relationship between exports and real industrial output of China in the 1987±1996 period. And thus the ELG hypothesis, which is considered to be a unidirectional causal relationship is therefore overruled in the case of China.

The article (Siliverstovs & Herzer, 2006) studies the impact of manufacturing exports on economic growth of Chile. Using the annual time series data, the study investigates the effect of manufacturing exports on productivity and thus on economic growth. the results of the study reports there is a discriminated impact of manufactured exports on the growth of the country.

Then, further the existing literatures on Indian Exports, New Policy Reforms and role of “the exports on Economic growth” of India have been studied. (Agrawal, 2015) inspects the role of ELG hypothesis in Indian economic growth, and has found that ELG hypothesis as significant evidence on economic growth of the country post liberalisation phase. (Dar et al., 2013) re-examined this relationship using a cross correlation method and a Wavelets based correlation. The results states that this association grows stronger as time horizons increases and also describes the existence of positive association between “the export growth and output growth” in India.

Further the study of (Dash, 2009) found mixed results of relationship between “the economic growth and exports”. The study states, a unidirectional relationship exists between exports to output. Therefore, the author reaffirms, for India, supplementary liberalization of trade policies will help in boosting the international trade and results in enhancement of economic growth.

(Sanjaya Lall, 1999) conducted a comparative study of Indian manufactured exports, with that of economic development, and advises that manufacturing export’s structure and arrangements are not suitable for the constant growth. The existence of framework for attracting FDI, and the capabilities to adopt to immediate structural changes to enhance the growth of exports is very low. The Paper further states that the technological structure of export matters for their growth. Thus the country must focus on technological structure of the export oriented firms and those will enhance the growth.

The literatures considered for the study, states that there is a scope for studying the association between “the manufacturing exports, FDI and Economic growth of India”. The available studies dates back to 2012. Hence the need for an updated results and role of exports is the reason for this study.

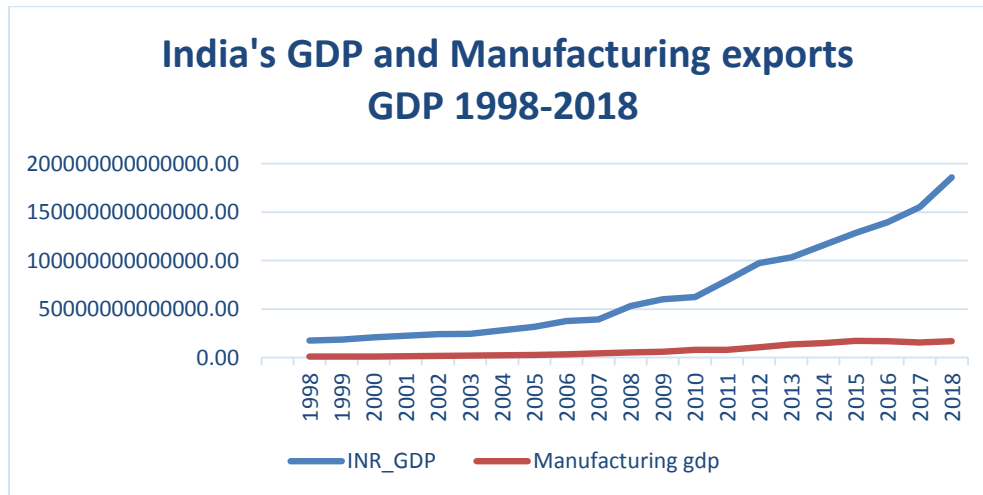
Hence this study majorly concentrates on the influence of manufacturing exports on

the economic growth in India from the time period of 1998-2018 and also on the policy support given by the government and other institutions to facilitate the potential growth of top performing export sectors.

Methodology:

The data on Manufacturing exports and The Total GDP of India and Manufacturing GDP has been collected from the secondary sources for a period of 1998 to 2018. The data has also been collected from RBI website, Directorate General of Commerce Intelligence and Statistics (DGCI&S), Ministry of commerce and Industry, and World Development Indicators.

The growth of manufacturing GDP and Total GDP over the last 20 years has been seen from the below chart.



The data with respect to 10 key manufacturing exports and Policy framework to promote exports of these sectors have been collected from the respective sectoral sites. The export promotion centres of the Key manufacturing sectors for Apparels, leather, Electronics, Engineering products, thermal power, Gems and Jewellery, Cotton etc., also provided the data with respect to the inflow of funds, incentives and promotional activities carried out for growth of the respective sectors exports. Further the details about Iron and Steel, Electrical Machinery, Automobile Exports, Thermal Power, Renewable Energy sectors information has been collected from the sector specific websites.

The detailed contribution of each manufacturing exports to the GDP is considered for the study. The Simple Linear regression model is used to estimate the influence of manufacturing exports on GDP.

The study has been conducted by taking the following two hypotheses:

H1: Total Exports of a country influence the Economic growth (GDP considered)

H2: Manufacturing Exports influence the Economic growth (GDP considered)

1.Total exports and Economic growth (GDP considered).

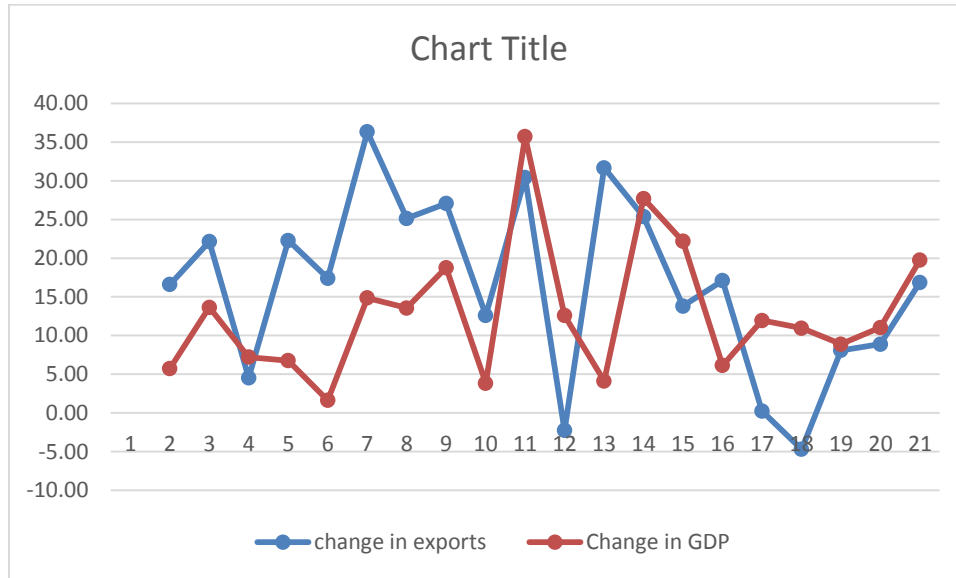
Hypothesis statement 1:

- H0: There is no significant influence of Exports on GDP.
- H1: There is significant influence of Exports on GDP.

Table 1.1.1 Showing the Total exports and GDP from 1998-2018.

Year	Exports of goods and services (in crores)	GDP (amount in crores)
1998	195280.00	1746081.94
1999	227697.00	1846283.62
2000	278126.00	2097978.96
2001	290757.00	2249264.16
2002	355556.00	2400993.73
2003	417425.00	2439720.66
2004	569051.00	2802452.84
2005	712087.00	3182211.90
2006	904872.00	3779850.82
2007	1018907.00	3924611.20
2008	1328765.00	5326059.10
2009	1298780.00	5996546.70
2010	1710193.00	6243837.01
2011	2143931.00	7973382.82
2012	2439707.00	9742379.20
2013	2856781.30	10338959.48
2014	2863636.28	11572935.76
2015	2728647.42	12840401.61
2016	2948772.11	13980459.14
2017	3210546.57	15522215.25
2018	3752229.76	18589620.25

The above table displays the growth of Exports from India Post Liberalisation period. The new Reforms Policy has played a critical role in enhancing the exports of India. The growth in exports over the last two decades has been almost 1800 times the exports as on 1998. The GDP of the country has also seen the similar exponential growth, where the GDP of the country has increased by 970 times. When we compare the growth of exports and growth of GDP, we can see that the country's exports have been raising at the double speed as compared to the GDP.



The above diagram represents the variation in Exports and The variation in GDP across the period from 1998 to 2018. It has been observed from the above chart that the movements in exports and GDP are correlated to the extent, where as the change is GDP is less as compared to the change in Export, which is dynamic.

2. Manufacturing exports and Economic growth

Hypothesis statement 2:

- H0: There is no significant influence of Manufacturing Exports of goods on GDP.

- H1: There is significant influence of Manufacturing Exports of goods on GDP.

The following table displays the growth of Manufacturing Exports from India Post Liberalisation period. The new Reforms Policy and the prominence given by the key manufacturing sectors to boost their exports has played a crucial role in enhancing the exports of India. Similar to the growth in total exports, the growth in manufacturing exports over the last two decades has been almost 1500 times the exports as on 1998. The GDP of the country has also seen the similar exponential growth, where the GDP of the country has increased by 970 times. When we compare the growth of manufacturing exports and growth of GDP, we can see that the country’s exports have been raising at the 1.5 speed as matched to the GDP. The total exports also include the export of services to other countries, India having a strongest Service Industry, the Service Exports of the country have contributed to the total exports to reach double the growth.

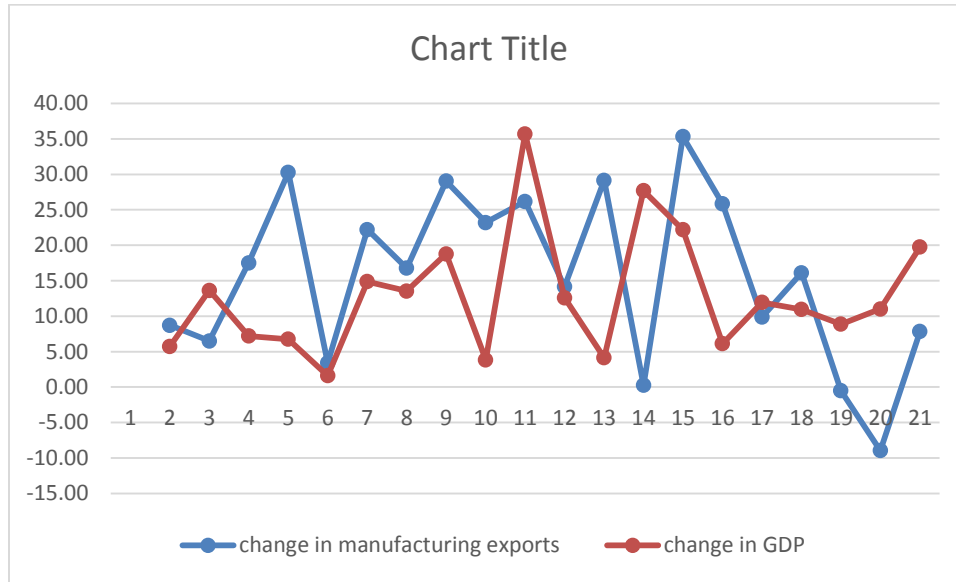
Table 1.2 Showing the Manufacturing exports and GDP from 1998-2018.

Year	Manufacturing exports	GDP (amount in crores)
1998	10160127.91	1746081.94
1999	11044762.44	1846283.62
2000	11764039.21	2097978.96

2001	13824803.35	2249264.16
2002	18007671.28	2400993.73
2003	18620499.17	2439720.66
2004	22754245.27	2802452.84
2005	26571405.55	3182211.90
2006	34287794.65	3779850.82
2007	42243735.92	3924611.20
2008	53303427.05	5326059.10
2009	60847908.72	5996546.70
2010	78585013.43	6243837.01
2011	78782121.77	7973382.82
2012	106615614.00	9742379.20
2013	134175554.99	10338959.48
2014	147407656.79	11572935.76
2015	171181384.19	12840401.61
2016	170310005.49	13980459.14
2017	155058197.39	15522215.25
2018	167212741.60	18589620.25

The above diagram represents the change in Manufacturing Exports and GDP across the period from 1998 to 2018. It has been observed from the above chart that the movements in exports and GDP are correlated to the extent, where as the change in GDP is less as compared to the change in Export, which is dynamic.

SINO.	Commodities	Average of total exports from 1998-2018 Rupees in Lakhs.	FDI Investment in India (US \$ million)
1	Mineral Industry	1,22,68,078.33	1190.47
2	Gems and Jewellery Industry	1,20,58,167.35	2899.84
3	Nuclear reactors, boilers, industry.	33,40,725.02	314.72
4	Organic chemicals	32,48,197.99	12694.28
5	Vehicles and parts.	32,09,724.98	3092.31
6	Articles of clothing accessories, not knitted or crocheted.	28,25,964.69	15230
7	Pharmaceutical products	27,14,967.46	25390
8	Electrical machinery	26,89,971.31	3000.35
9	Iron and steel	24,10,656.72	14240
10	Cotton.	23,88,574.60	17750



The Next objective is to **identify the contribution of specific export led products on economic growth under manufacturing exports in India.**

Table 2.1.

Title: Table showing Top 10 commodities which have on an average contributed extensively to the annual GDP from 1998-2018

(Source: Authors compilation from the original data collected from FIEO)

The above table information was framed by considering all the manufacturing products being exported from India and their total exports earned in every individual year from 1998 till 2018. The total export contribution was used to calculate average for 20 years and out of the results, top 10 contributing commodities were considered to derive the top performing products on an average in the past 20 years.

Form the above table it can be observed that these ten manufacturing products on an average have been contributing extensively to the total exports and there is a high scope of consistency in contribution if the sectors are supported well by the government and financial organisations. The exports might undergo fluctuations on short term basis due to few unexpected circumstances, like business cycles, internal factors to businesses, but if consistent support and uniform practices are maintained, the sectors can continue to perform well on long run.

Similarly, we have looked into the sectors which have considerable contributed to the country’s GDP. The top 10 Manufacturing sectors contributing to GDP of the country are:

Table 2.2

Title: Table showing Top 10 commodities which have on an average contributed extensively to the annual GDP from 1998-2018

S. No.	Commodity	Average % share of contribution to GDP from 1998-2018
1	Gems and Jewellery Industry	15.68399524
2	Mineral Industry	10.81166667
3	Articles of clothing accessories, not knitted or	5.060847619

	crocheted.	
4	Organic chemicals	3.979309524
5	Cotton.	3.889642857
6	Nuclear reactors, boilers, industry.	3.821095238
7	Vehicles and parts.	3.216638095
8	Electrical machinery and equipment and parts industry	3.140838095
9	Iron and steel	3.104333333
10	Articles of clothing Apparels, accessories,	3.06902381

(Source: Authors compilation from the original data collected from FIEO)

The above table information was framed by considering all the manufacturing products being exported from India and their percentage of share contributed to the respective year's GDP from 1998 till 2018. The percentage of share contributed was used to calculate average for 20 years for every individual product and out of the results, top 10 contributing commodities were considered to derive the top performing products on an average in the past 20 years. Form the above analysis it can be inferred that these ten manufacturing products on an average have been contributing extensively to the GDP.

EMPIRICAL RESULTS:

Regression Analysis:

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.977888253
R Square	0.956265435
Adjusted R Square	0.953963615
Standard Error	1103635.646
Observations	21

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	5.0601E+14	5.0601E+14	415.439	2.25661E-14
Residual	19	2.31422E+13	1.218E+12		
Total	20	5.29152E+14			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	300422.4953	402965.2819	0.74552948	0.465076	542993.5329	1143839
X Variable 1	4.287748254	0.210366052	20.3823203	2.26E-14	3.847447047	4.728049

The model used for analysis is a simple linear regression model, to estimate the association between the Exports of goods and services and Total GDP of India.

The equation used is,

$$\text{Total GDP} = a + b \text{ Exports of goods and services} + e$$

The results of the analysis, depicts that, the model is significant for having a association between the manufacturing exports and total GDP. R² value of 0.9562 depicts that the variance in the GDP is Explained through exports of goods and services. It States the regression model is significant and accurate. P value of 2.26 E⁻¹⁴ which is less than 0.05 states that, the model is significant and hence rejects the null hypothesis and proves the alternative hypothesis.

Thus it can be said firmly that the Exports of goods and services have a noteworthy influence on the total GDP.

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.984168321
R Square	0.968587284
Adjusted R Square	0.966842133
Standard Error	820021.9837
Observations	20

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	3.73213E+14	3.73213E+14	555.0163553	5.60342E-15
Residual	18	1.21038E+13	6.72436E+11		
Total	19	3.85317E+14			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	1108685.987	286678.6732	3.867347279	0.001128626	506396.4438	1710976
Manufacturing exports	0.07603765	0.003227571	23.5587851	5.60342E-15	0.069256775	0.082819

The results of the analysis, depicts that, the model is significant for having a relationship between the manufacturing exports and total GDP. R² value of 0.9685 depicts that the variance in the GDP is Explained through Manufacturing Exports. This States the regression model is significant and accurate. P value of 5.6034 E⁻¹⁵ which is less than 0.05 states that, the model is significant and hence rejects the null hypothesis and proves the alternative hypothesis.

Thus it can be said firmly that the Manufacturing exports have a significant influence on the total GDP.

CONCLUSION:

There is still a discussion amongst economist regarding the export led growth hypothesis in case of India. However, this paper examines the relationship between the manufacturing exports and their effect on economic growth of India, using the data from 1998 to 2018. The simple linear regression method has been used to estimate the relationship between the variables.

For India, the study finds that the manufacturing exports have been contributing to growth in the GDP of the country. The regression test, P value supports the univariate model built to examine the influence of Manufacturing exports on Economic growth (GDP). The study further reveals the key sectors to be focused by the government to develop the economy. It has been noted in the study that, the key export sectors, except gems and jewellery and articles of accessories, the other key manufacturing exports have been attracting a considerable FDI in India. Further Policy measures on Investments in India will ensure growth of Indian Manufacturing sector.

REFERENCES:

- Abual-Foul, B. (2004). Testing the export-led growth hypothesis: Evidence from Jordan. *Applied Economics Letters*, 11(6), 393–396. <https://doi.org/10.1080/1350485042000228268>
- Agrawal, P. (2015). The role of exports in India's economic growth. *Journal of International Trade and Economic Development*, 24(6), 835–859. <https://doi.org/10.1080/09638199.2014.968192>
- Balassa, B. (1978). Exports and economic growth. *Journal of Development Economics*, 5, 181–189.
- Bhattacharya, M., & Bhattacharya, S. N. (2011). the Interrelationship Between Merchandise Trade, Economic Growth and Fdi Inflows in India. *South-Eastern Europe Journal of Economics*, 9(2), 229–244.
- Bleaney, M. F. (1993). Manufactured exports of developing countries and their terms of trade since 1965: A comment. *World Development*, 21(10), 1615–1616. [https://doi.org/10.1016/0305-750X\(93\)90095-Q](https://doi.org/10.1016/0305-750X(93)90095-Q)
- Chandra Parida, P., & Sahoo, P. (2007). Export-led Growth in South Asia: A Panel Cointegration Analysis. *International Economic Journal*, 21(2), 155–175. <https://doi.org/10.1080/10168730701345414>
- Dar, A. B., Bhanja, N., Samantaraya, A., & Tiwari, A. K. (2013). Export Led Growth or Growth Led Export Hypothesis in India: Evidence Based on Time-Frequency Approach. *Asian Economic and Financial Review*, 3(7), 869–880.
- Dash, R. K. (2009). Revisited export-led growth hypothesis: An empirical study on India. *South Asia Economic Journal*, 10(2), 305–324. <https://doi.org/10.1177/139156140901000203>
- Dreger, C., & Herzer, D. (2013). A further examination of the export-led growth hypothesis. *Empirical Economics*, 45(1), 39–60. <https://doi.org/10.1007/s00181-012-0602-4>
- FEDER, G. (1982). On Exports and Economic Growth. *Journal of Development Economics*, 12, 59–73. <https://doi.org/10.17576/pengurusan-2002-21-01>
- Kumari, D., & Malhotra, D. N. (2014). Export-Led Growth in India: Cointegration and Causality Analysis. *Journal of Economics and Development Studies*, 2(2), 297–310.

- Lall, S. (2000). The technological structure and performance of developing country manufactured exports, 1985-98. *Oxford Development Studies*, 28(3), 337–369. <https://doi.org/10.1080/713688318>
- Lall, Sanjaya. (1999). India's manufactured exports: Comparative structure and prospects. *World Development*, 27(10), 1769–1786. [https://doi.org/10.1016/S0305-750X\(99\)00084-4](https://doi.org/10.1016/S0305-750X(99)00084-4)
- Li, T. U. A., & Manap, A. (2005). Export-led growth hypothesis: further econometric evidence from south asia. *The Developing Economies*, 4(December), 472–488.
- Marin, D. (1992). Is the export-led growth hypothesis valid for industrialized countries? *Review of Economics and Statistics*. Pp, 74(4), 678–688.
- Narayan, P. K., Narayan, S., Prasad, B. C., & Prasad, A. (2007). Export-led growth hypothesis: Evidence from Papua New Guinea and Fiji. *Journal of Economic Studies*, 34(4), 341–351. <https://doi.org/10.1108/01443580710826380>
- Ram, R. (1985). Exports and economic growth: some additional evidence. *Economic Development & Cultural Change*, 33(2), 415–425. <https://doi.org/10.1086/451468>
- Rod Erfani, G. (1999). Exports and economic growth in developing countries. *International Advances in Economic Research*, 5(1), 147–148. <https://doi.org/10.1007/bf02295041>
- Shafiullah, M., Selvanathan, S., & Naranpanawa, A. (2017). The role of export composition in export-led growth in Australia and its regions. *Economic Analysis and Policy*, 53, 62–76. <https://doi.org/10.1016/j.eap.2016.11.002>
- Shan, J., & Sun, F. (1998a). Export-led growth hypothesis for Australia: an empirical re-investigation. *Applied Economics Letters*, 5(7), 423–428. <https://doi.org/10.1080/135048598354555>
- Shan, J., & Sun, F. (1998b). On the export-led growth hypothesis: the econometric evidence from China. *Applied Economics*, 30(8), 1055–1065. <https://doi.org/10.1080/000368498325228>
- Silverstovs, B., & Herzer, D. (2006). Export-led growth hypothesis: Evidence for Chile. *Applied Economics Letters*, 13(5), 319–324. <https://doi.org/10.1080/13504850500407293>
- Tiwari, A. K., & Mutascu, M. (2011). Economic Growth and FDI in Asia: A Panel-Data Approach. *Economic Analysis and Policy*, 41(2), 173–187. [https://doi.org/10.1016/S0313-5926\(11\)50018-9](https://doi.org/10.1016/S0313-5926(11)50018-9)
- Tyler, W. G. (1981). Growth and export expansion in developing countries. Some empirical evidence. *Journal of Development Economics*, 9(1), 121–130. [https://doi.org/10.1016/0304-3878\(81\)90007-9](https://doi.org/10.1016/0304-3878(81)90007-9)
- Wei, Y., & Liu, X. (2006). Productivity spillovers from R and D, exports and FDI in China's manufacturing sector. *Journal of International Business Studies*, 37(4), 544–557. <https://doi.org/10.1057/palgrave.jibs.8400209>
- Wicksell, K. (1981). transnational corporations and manufactured exports from poor countries. *The Economic Journal*, 91(361), 199. <https://doi.org/10.2307/2231709>
- Yao, S. (2006). On economic growth, FDI and exports in China. *Applied Economics*, 38(3), 339–351. <https://doi.org/10.1080/00036840500368730>
- Zhang, K. H., & Song, S. (2001). Promoting exports: The role of inward FDI in China. *China Economic Review*, 11(4), 385–396. [https://doi.org/10.1016/S1043-951X\(01\)00033-5](https://doi.org/10.1016/S1043-951X(01)00033-5)