

Export - Import Performance of Natural Rubber in India



A. Muthusamy, S. Sundararajan

Abstract: This paper assesses the performance of rubber exports during the period of 2010 -2011 till 2017 - 2018. Indian Rubber is an export promotion strategy promoted by the Board since 2011 with an objective of distinguishing Indian rubber in international market with its discerning quality features. The board is promoting export as a market intervention strategy to adjust imbalances in the domestic market owing to unscrupulous imports of rubber. Exports during this peak production period are at high level from December 2016 to March 2017. The exports of rubber from India jumped to 650 tonnes during April 2018 to October 2018. The price of natural rubber (NR) in India had been ruling high over international market prices since December 2013. The surge in international rubber price was due to the amplified demand for rubber from China. United States and the European Union together contribute nearly 70 % of India's overall rubber products' exports. Indian exporters, however, are looking to raise India's share in the world market to 5 per cent in the next couple of years from the existing 1.48 per cent compared to China's market share of 11 per cent. This paper examines the export and import performance of rubber from India. Researcher has collected the secondary data from various sources such as DGCIS, EXIM Bank annual reports, etc. This paper brings out the relationship between the export and import performance of rubber from India and the trade performance of Natural rubber, ratio, Pearson's Correlation Coefficient and One - Way ANOVA has been used for analyzing appropriate results.

Keywords : Natural Rubber, Rubber Board, National Board for Rubber, Export Promotion Council, DGCIS, IRRDB, RPS, RRII.

I. INTRODUCTION

The Indian rubber industry is a key donor to the country's manufacturing GDP and national economy that includes earning of significant foreign exchange through rubber export products. Rubber is supplement to all the sectors of economy such as aviation, textiles, railways, road transport, engineering goods, etc. The main source of raw material which is used in the production of rubber is 'tuberis'. After Thailand, Indonesia and Malaysia, India ranks fourth in production of natural rubber. At the world market level the India's share of natural rubber has been increased. Some of the states in south India such as Kerala, Tamil Nadu and Karnataka supply adequate natural rubber production in

India. In fact, Kerala produces 90% of the rubber. Indian Rubber Board has released the recent statistics or information about the consumption pattern of natural rubber which shows that it has exceeded the production pattern. Therefore the trend shows clearly, how the rubber is an important commodity in the present period. Natural rubber production is the god's gift of nature. Around 0.4 per cent of the gross cropped area is occupied by rubber and it contributes to 0.19 per cent to the national GDP. Some of the factors responsible for the exponential growth in 21st century in the rubber exports are due to vast internal market, rapid industrialization, on-going economic reforms, and improved living standards of the masses. The Indian rubber industry serving industries produces a wide range of rubber products. The rubber business guardians the beginning of a wide scope of items like adhesives, stationeries, auto tyres and tubes, cycle parts, footwear, belts, cables and wires, sports goods, surgical and pharmaceutical products etc. India and China are the only countries, in the world which have the capability to consume the entire indigenous production of natural rubber, and both are being growing economies are sure to dominate the global rubber market in the years to come.

The rubber plantation in India occupies 0.40 per cent of overall yield area and contributes to 0.19 per cent to GDP in India. Rubber is said to be the back bone of agricultural scenario of the country and there is a huge influence on the economic and social position of the people. In India Kerala accounts for 90% of total rubber manufacture (DGCIS - 2018) and there are three districts in India which produce hefty. Rubber could be categorized under three major categories which are in use today, namely: natural form of rubber (natural rubber), synthetic rubber and reclaimed rubber. Natural rubber is extracted from the rubber tree, the sap which we use to take and it is utterly processed, which grows primarily in South East Asian countries. Artificial rubber is also termed as synthetic rubber which is extracted, made from raw materials such as butadiene, styrene, isoprene, chloroprene, isobutylene, acrylonitrile, ethylene and propylene. Reclaimed rubber is made by the treatment of ground vulcanized scrap of rubber tires, tubes and miscellaneous waste rubber articles, some of the chemical agents used to be as application of heat and chemical agents. This is followed by intense mechanical working, which gives regenerated rubber almost original plasticity. Natural rubber accounts for about 42% of the overall global production of rubber. Exports of rubber products, which have been growing at a healthy double digit rates for about two decades, have seen the growth rate dwindle in the last three financial years.

Manuscript published on November 30, 2019.

* Correspondence Author

Dr. A. Muthusamy*, Professor, Department of International Business, Alagappa University, Karaikudi, India. Email: muthuroja67@gmail.com

Mr.S. Sundararajan, Department of International Business, Alagappa University, Karaikudi, India. Email: Sundararajanibm@gmail.com

© The Authors. Published by Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP). This is an [open access](https://creativecommons.org/licenses/by-nc-nd/4.0/) article under the CC-BY-NC-ND license <http://creativecommons.org/licenses/by-nc-nd/4.0/>

Export - Import Performance of Natural Rubber in India

This is a cause of concern as rubber is a sunrise sector and the potential for exports is immense notwithstanding the economic slowdown in some of the export markets. The Market intervention strategy is being implemented to adjust the imbalances and Rubber Board is promoting in the domestic market owing to deceitful imports of rubber. Majority of natural rubber are exported to nations like Germany, Brazil, the US, Italy, Turkey, Belgium, China, Egypt, the Netherlands, Malaysia, Pakistan, Sweden, Nepal, and the UAE. The Indian rubber industry is contributing at the largest level then comes the countries like Japan, USA and Europe. The Indian rubber industry plays a vital role in economic development of country since rubber plantation sector supply around 630 hundred thousand tonnes of natural and there is a projected production of one million in upcoming years. Some of the key factors that have contributed to the intensification of Indian rubber industry are encouraging involvement of institutional organization aspiring at self-sufficiency and import substitution.

II. NEED AND IMPORTANCE OF THE STUDY

Rubber plantations in India are abundant and are very useful in Trade policy reforms over the last decade have aimed at creating an environment for achieving rapid increase in exports and imports of natural rubber. The prime objective of this paper aims at knowing the level of exports and imports of natural rubber. The Government of India had adopted different norms in fixing the bound rates natural rubber. Under the WTO agreement the natural rubber is categorized as industrial raw material and the rubber products are used worldwide for varied purposes. Conventional cultivation of rubber is being carried out by Kerala and Tamil Nadu state which account for 81% of production. Rubber has got good return on investment since the usage is very extensive day- to -day. To examine the use of natural rubber this study focuses on trade performance of exports and imports.

III. REVIEW OF LITERATURE

Shahul Hameedu (2014) in their paper entitled "**Role of Rubber Producers Societies in Kerala**", stated that India produces and utilizes maximum number of rubber comparing to other countries. Most of the products has its applications.

Oskoee & Bourdon (2005), in their study entitled "**Exchange Rate Uncertainty And Trade Flows Between the United States and China**", examined that the REERV and AGM has negative long term relationship, where as there is a positive long term relationship between the REERV and AGX series.

Mesike (2005) in his study entitled "**Analysis of Determinants of Rubber Export Supply in Nigeria**", observed that there is a negative relationship between exchange rate and rubber exports. The imports are increased due to the lower exchange rate and other policy.

Fugazza (2004), in her study entitled "**Export Performance and Its Determinants: Supply and Demand Constraints**" stated that some of the exponential factors that influence the export behavior are policies of government, export of rubber plantation has contributed a lot for the country's GDP. Foreign direct investment donates to capital formation and

assist by promoting the upliftment of knowledge based industry.

Mohammed (1988), Mohamed and Mad Nasir (1993) in their study entitled "**Malaysian natural rubber market model**", found that more recent data is used and it is needed to examine the natural rubber Industry.

IV. OBJECTIVES

The following are the objectives of the study.

1. To determine the export - import ratio of natural rubber.
2. To analyze the country - wise export performance of rubber from India.
3. To examine the trade performance of Natural rubber.

A. Research Methodology

In this research article, researcher has used secondary data for this study. The data collected from various sources such as DGCIS, DIPP, EXIM bank and other relevant journals..

B. Period of the Study

This study covers the period of 8 years from 2010- 2011 to 2017-2018. Researcher has gathered the secondary data for the analyzing the trade performance of natural rubber.

C. Export - Import Ratio of Natural Rubber

The below Table 1 represents the export- import ratio of Natural rubber in India. (1)

Table- I: EXPORT - IMPORT RATIO OF NATURAL RUBBER

YEAR	Value of Exports (Rs. in Crores)	Value of Imports (Rs. in Crores)	EXPORT / IMPORT RATIO
2010 - 2011	7.85	202.13	3.88
2011 - 2012	5.36	124.20	4.32
2012 - 2013	5.69	230.25	2.47
2013 - 2014	11.35	264.20	4.30
2014 - 2015	185.89	214.20	86.78
2015 - 2016	225.36	212.30	106.15
2016 - 2017	318.25	170.23	186.95
2017 - 2018	458.17	277.30	165.23

Source: Indian Rubber Statistics, Rubber Board of India, Kottayam, India.

Table 1 explains the export - import ratio of natural rubber of India. It can be read from table 1, that from 2010-11 to 2017-2018 the export value of rubber was too meager, which we could consider as responsible factor. From the year 2015 to 2018 the export - import ratio of natural rubber has been tremendously increasing year -by- year. During the year 2017-2018 the export import ratio could seen at the peak level i.e. 165.23%. It is observed that during the study period export - import ratio determines the level of differences in export and import. The below graph also represents the year-wise decline and incline of value of export and import of natural rubber.



V. HYPOTHESES

H0 - There is a significant relationship between the value of exports and value of imports.

CORRELATION ANALYSIS

		Value Of Exports	Value of Imports	EXPORT / IMPORT RATIO
Value Of Exports	Pearson Correlation	1	.292	.957**
	Sig. (2-tailed)		.483	.000
	N	8	8	8
Value of Imports	Pearson Correlation	.292	1	.118
	Sig. (2-tailed)	.483		.781
	N	8	8	8
EXPORT / IMPORT RATIO	Pearson Correlation	.957**	.118	1
	Sig. (2-tailed)	.000	.781	
	N	8	8	8

** . Correlation is significant at the 0.01 level (2-tailed).

The correlation indicates the presence or absence of a relationship, not the nature of the relationship. Correlation is not causation. Correlation is performed to determine the significance and the Value N= 8, the value of correlation stood at 0.292, Since, the value is much lesser than the relationship between the two variables are 'weak'. It is seen that the relationship between the variables are very weak (since nearer the value to zero the relationship is weak). The value of coefficient of determination is said to be 0.292 and 0.483 and the N = 8. The relationship between the Value of Imports and exports and the value of export import ratio is said to be 0.118 and 0.957 where the relationship between the export import ratio and the value of exports is higher or strong, and the Value of export - import ratio and value of export is very weak.

VI. COUNTRY- WISE IMPORTS OF NATURAL RUBBER

The below Table 2 represents the country - wise import performance of Natural Rubber in India.

Source: Computed.

TABLE - II - COUNTRY-WISE IMPORT PERFORMANCE OF NATURAL RUBBER for the period 2011-12 to 2017-18

Country	2011 - 12	2012 - 13	2013 - 14	2014 - 15	2015 - 16	2016 - 17	2017 - 18	CAGR	RANK
Thailand	189.25	285.36	295.14	287.35	302.25	125.42	161.22	-2.26	VII
Indonesia	103.65	232.14	254.24	298.14	246.67	344.19	479.14	24.45	II
Vietnam	86.37	89.36	91.25	94.37	104.87	112.35	111.77	3.75	V
Bangladesh	3.88	4.12	4.89	5.02	5.11	5.96	5.11	4.01	IV
Sri Lanka	0.64	0.81	0.92	0.98	1.03	1.7	2.92	24.21	III
Malaysia	12.65	13.28	12.87	16.47	18.95	20.35	10.24	-2.97	VI
Nigeria	0.25	0.49	0.95	1.35	1.84	2.78	2.92	42.07	I
World	396.69	340.2	659.24	703.68	679.69	612	773.32	10.01	

Source: DGCIS

During the study period 2013 - 2018 the CAGR for the rubber exports to the other countries are observed and the maximum growth rate is seen in the case of Nigeria (42.07) followed by Indonesia (24.45%), Bangladesh (4.01%),

Vietnam (3.75), The lowest growth rate in the rubber import is seen in the case of Malaysia (-2.97%). Thus we have analyzed the growth rate using the CAGR.

TABLE - III - TRADE PERFORMANCE OF NATURAL RUBBER (in Millions)

Year	Export	Import	Production	Consumption	Import Penetration Ratio
2010 - 2011	1840	21121	583830	571820	0.32
2011 -2012	3356	32020	605045	591545	0.21
2012 -2013	7844	29534	622265	628110	0.23
2013 -2014	5989	20213	631000	631475	0.25
2014 -2015	6891	49769	649000	638000	0.29
2015 -2016	55311	26217	71 1000	695000	0.34
2016 -2017	75905	44199	687000	719000	0.38
2017 -2018	46169	68718	749000	755000	0.46

Source: Computed, Indian Rubber Statistics' published by Rubber Board of India, Kottayam.

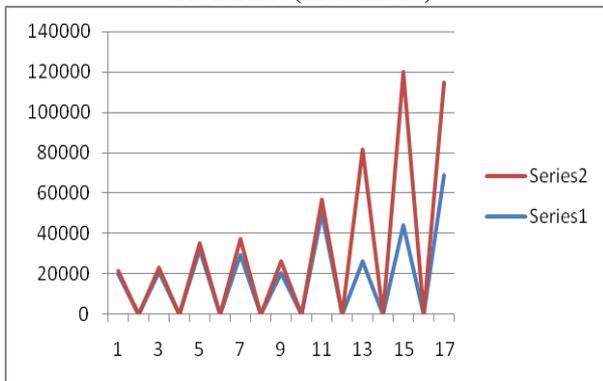
During the study period (2010 -2011 to 2017 - 2018), researcher found that there is a higher penetration in imports during the year 2018 and it is 0.46. The export import

penetration ratio was lower during the year 2012 and it is 0.21.

Export - Import Performance of Natural Rubber in India

Researcher has found lower penetration during the particular year. From the year 2012 to 2018 the export penetration ratio could be seen fluctuating. Through the 'Chart -1' it is clearly understand that the fluctuations that occurred during the consequent number of years. One - Way ANOVA has been used by the researcher to FIND OUT whether there is any statistical significance between the variables.

CHART - I - TRADE PERFORMANCE OF NATURAL RUBBER (in Millions)



- Government provides special subsidies given for the plantation of rubber.
- The Rubber Park will be established by the government in various rubber producing states.

The above results show that the **f-ratio value is 0.00116**. The **p-value is .973268**. The result is not significant at $p < 0.05$. Hence it is concluded that there is no significant difference in the computed values for the year wise export and import of natural rubber during the study period 2010 - 2011 to 2017 - 2018. The country - wise export import shows that there is a rapid growth of natural rubber.

VII. ONE WAY ANOVA

Result Details				
Source	SS	df	MS	
Between-Treatments	4192256.25	1	4192256.25	F=0.00116
Within-treatments	50434140537.5	14	3602438609.8214	

VIII. INITIATIVES TAKEN BY THE GOVERNMENT TO BOOST RUBBER INDUSTRY

- In order to review the scheme of government an expert committee has been constituted for increasing the number of rubber plantations and attractive to growers. Through the modified scheme the action has been taken and the committee has submitted the recommendations also.
- The government of India has increased the duty on natural rubber to 25% from 20%, making imports costlier than before, to ensure that higher exports should happen.
- Government of India planning to set up a process - cum - product development centers .

IX. CONCLUSION

The export potential of rubber products from India is enormous. Unfortunately, the share of India in rubber exports market is a paltry 1.48 per cent, whereas China has 6 per cent.

Exports income from Natural Raw Rubber has depicted an increasing trend because the last few years period mostly due to low rubber prices in the world market. The industries which are non - tyre manufactures needs to be provided with high priority due to high value addition and the presence of increasing global demand. Natural rubber is demanded and it will grow steady because of major sectors like automobiles, furniture, footwear, auxiliaries, etc. The fluctuations that have been observed during the study period from the graph and that has shown the increasing trend. Rubber industries need to show better performance in terms of export and import for the future growth self-sustainability.

REFERENCES

1. www.business-standard.com/article/economy-policy/rubber-articles-exports.
2. www.thehindubusinessline.com/markets/commodities/big-leap-in-natural-rubber-exports/article9647659.ece.
3. www.indiannaturalrubber.com.
4. National Rubber Policy (2019). Ministry of Commerce and Industry, Govt of India, Press Release.
5. Mirawati Yanita M, et.al., "Determinant Analysis for Rubber Export in Indonesia", *International Journal of Scientific and Research Publications*. Vol. 6. Issue. 9. September 2016. ISSN 2250 - 3153. P.478.
6. Shahul Hameedu "Role of Rubber Producers Societies in Kerala", *International Journal of Current Research and Academic Review*. Vol. 2. Issue. 2. February 2014. Pp. 159 -166.
7. Mesike, "Analysis of Determinants of Rubber Export Supply in Nigeria", M.Sc. Thesis, Ibadan: University of Ibadan, pp. 94-98.
8. Fugazza, "Export Performance and Its Determinants: Supply and Demand Constraints", Study No. 26. UNCTAD. 2004
9. Huchet-Bourdon, M. and B. Mahmani-Oskooee , "Exchange Rate Uncertainty And Trade Flows Between the United States and China"; *The Agricultural Versus the Non-agricultural Sector. The Chinese Economy*, vol. 46, no. 2, pp. 29-53. 13. 2013.
10. Academic Foundation "Successful Governance Initiatives and Best Practices: Experiences from Indian States", India. Planning Commission. State Plans Division, Human Development Resource Centre. Academic Foundation. 2003. ISBN: 8171883060, 9788171883066. Pp.50-51.
11. Veeraputran , "Trends and Fluctuations in Indian Natural Rubber Prices: 1968-69 to 1997-98", M. Phil Thesis, Centre for Development Studies, Trivandrum.
12. E.O. Abolagba, et.al., "The Performance of Rubber Exports in Nigeria. *Global Advanced Research Journal of Management and Business Studie*" December,2016. ISSN: 2315-5086. Volume -5. Issue 10. Pp.347-353.

AUTHORS PROFILE



Dr. A. Muthusamy, Down to Earth Confident person, having expertise in the areas of International Business, Completed M.Com, MBA, M.Phil., PGDCA, CCT, Ph.D. Published more than 72 in reputed journals, having more than 12 years of research experience. Guided 8 Ph.D Scholars, 20 M.Phil students and MBA students for past 20 years. Member in Indian Commerce Association. Served as External Examiner for more than 20 Ph.D Viva - Voce.



Mr. S. Sundararajan, Research Scholar in the Department of International Business. Worked as Research Assistant in the ICSSR MRP. Published 7 articles in UGC listed Journal and one Scopus indexed Journal. Interested in publishing research articles in scopus indexed journals.