INDIA'S TARIFF POLICIES ON RUBBER AND RUBBER PRODUCTS UNDER REGIONAL TRADE AGREEMENTS: AN ANALYSIS OF OUTCOME, CHALLENGES AND POLICY IMPLICATIONS

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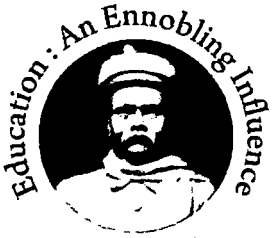

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DECLARATION BY THE CANDIDATE

I Joby Joseph, hereby declare that this thesis on the topic entitled, "*India's tariff policies on rubber and rubber products under regional trade agreements: An analysis of outcome, challenges and policy implications*" is submitted for the award of Degree of Doctor of Philosophy in Economics to the Gokhale Institute of Politics and Economics, Pune 411004.

It is an original contribution and has been completed during my tenure as a research scholar at Gokhale Institute of Politics and Economics, Pune.

This thesis has not been submitted by me elsewhere for the award of any degree or diploma-part or full. The information gathered by me elsewhere for the thesis is original, true and factual. Such material as has been obtain from other source has been duly acknowledged in the thesis. I hereby request, to consider the thesis for the award of the degree of 'Doctor of Philosophy'.

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ABSTRACT

Existing empirical studies on regional trade agreements (RTAs) provide contradicting results on net welfare effect of the RTAs. India signed a number of trade agreements with developed and developing countries during the last two decades, with the objective of enhancing total merchandise trade. Sector specific studies shows that (i) due to extensive tariff reduction under the RTAs, partner countries gain higher market share in India, and (ii) benefit of India in most of the RTAs is low due to lower base tariff in most of the partner countries.

Indian rubber industry is one sector, affected with surge in imports from the member countries of its RTAs. The balance of trade in rubber and rubber products of India was negative throughout the last decade. This was mainly due to higher growth in imports from member countries of RTAs. Imports from member countries of the RTAs of India are growing at a higher rate compared to import from other countries. India provided tariff concessions for import of various rubber and rubber products under twelve RTAs. Therefore, the present study is an attempt to analyse the impact of tariff liberalisation of India under the RTAs on the import of rubber and rubber products at the disaggregate level. Data from 1988 to 2017 are collected and analysed. For the analysis, product subheading-wise trade data of United Nations International Trade Statistics Database (UN Comtrade) provided in the World Integrated Trade Solution (WITS) of the World Bank was used. The trade data provided by (i) the Directorate General of Commercial Intelligence and Statistics (DGCI&S), Ministry of Commerce and Industry, Government of India, and (ii) INTRACEN are also used for the analysis. The data on GDP, distance, and other binary variables considered for the study are collected from the World Bank and Centre for Prospective Studies and International Information (CEPII, France). All the product subheadings covered under the chapter on rubber and rubber products (Chapter 40) of Harmonised System Nomenclature of the World Customs Organisation are analysed using the method gravity modelling, to understand the effect of tariff policy under the RTAs on the growth in import of rubber and rubber products. Further the structural break test is used to understand structural breaks in import of rubber and rubber products of India associated with the signing of RTAs or any other events/factors. For the analytical purpose, major rubber and rubber

products are classified into four categories such as raw material, intermediate, non-tyre and tyres & allied products based on the value addition of the industry.

The raw materials of rubber was prime in increasing the negative balance of trade in rubber and rubber products of India with the RTA partners of India during the period of analysis. The results of the gravity model analysis of nineteen product subheadings of rubber raw materials showed that the tariff policies under the RTAs have positively and significantly affected the growth in import of four tariff lines of synthetic rubber and one tariff line of reclaimed rubber. Though the import of rubber raw materials exhibited structural breaks in different time periods, none of the breaks were coincided with the signing of RTAs by India.

The share of intermediate rubber products in the value chain of the rubber industry is negligible compared to other segments of the rubber industry. Fifteen product subheadings of the intermediate rubber products are analysed, and the results shows that the import of intermediate rubber products are influenced more by growth in GDP than the tariff liberalisation under the RTAs of India. Among the intermediate rubber products, the RTAs significantly influenced the growth in import of only two product-subheadings.

In the case of nineteen non-tyre rubber product subheadings analysed, only the import of four tariff lines exhibited positive and significant relationship with the liberalised tariff policy of India under the RTAs. Among the product subheadings of non-tyre rubber products, the major traded product category is the articles of vulcanised rubber excluding hard rubber—other, which shows strong relationship between the tariff concessions provided under the RTAs and growth in import. This product category contains large number of small scale rubber goods like rubber bands, rubber threads, rubber bushes, ear plug, etc, which are manufactured in the MSME sector.

Thirteen product subheadings in the tyre segment are analysed. The results indicate that the growth in import of major product subheadings of new tyres and retreaded tyres are strongly related with the liberalised tariff policy of India under the RTAs. The tariff concession offered under the RTAs are positively and significantly affected the growth in import of major new tyre categories such as car tyres, truck/bus tyres, etc of the country. The analysis shows that though the growth in import of retreaded tyres exhibited strong relationship with the liberalised tariff policy of India under the RTAs the import of used tyres do not exhibited such a relationship with the

tariff policies under its RTAs. The import of inner tubes of tyres are also not affected with the tariff policies of India under the RTAs.

The shares of import of tariff lines affected due to duty concessions constituted 12.28 per cent, 18.24 per cent, 30.34 per cent and 71.94 per cent of the raw materials, intermediate rubber products, non-tyre products and tyres and allied products respectively. At the aggregate level, during the year 2019-20, the import of the fifteen product subheadings constituted more than 25 per cent of the total import of rubber and rubber products of the country. This indicate the extent of RTAs of India in the imports of value added rubber products into the country and in the negative balance of trade in rubber and rubber products. The study identified the products which showed higher growth in imports due to tariff policies under the RTAs. However, an analysis of its impacts on the domestic sector of the country was beyond the scope of the present study. Therefore, in order to formulate appropriate domestic and international trade policies, in the future, studies on the impact of growth in import of the products identified on the domestic industrial sector of India are suggested.

CONTENTS

ACRONYMS

AIFTA	ASEAN India Free Trade Agreement
AoA	Agreement on Agriculture
APTA	Asia Pacific Trade Agreement
ASEAN	Association of South East Asian Economies
ATMA	Automotive Tyre Manufacturers Association
BR	Butadiene Rubber
CAGR	Compound Annual Rate of Growth
CECA	Comprehensive Economic Cooperation Agreement
CEPA	Comprehensive Economic Partnership Agreement
CEPII	Centre for Prospective Studies and International Information
CGE	Computable General Equilibrium
CR	Concentration Ratio
CR	Chloroprene (Chlorobutadiene) Rubber
CU	Customs Union
DGCI&S	Directorate General of Commercial Intelligence and Statistics
DGFT	Directorate General of Foreign Trade
EL	Exclusion List
EPDM	Ethylene-Propylene-non-conjugated Diene Rubber
EXC	Excluded
EXIM	Export Import
FE	Fixed Effects
FGLS	Feasible Generalized Least Squares
FTA	Free Trade Agreement
GATT	General Agreement on Tariff and Trade
GDP	Gross Domestic Product
GNP	Gross National Product
GOI	Government of India
GSP	Generalised System of Preference
HS	Harmonised System
HSL	Highly Sensitive List

IIR	Isobutene-Isoprene (butyl) Rubber
INTRACEN	International Trade centre
IR	Isoprene Rubber
ISLFTA	Indo-Sri Lanka Free Trade Agreement
LDC	Less Developed Country
MERCOSUR	MERcado COmún del SUR (Southern Common Market)
MFN	Most-Favoured Nation
MNC	Multi-National Corporations
MOP	Margin of Preference
MSME	Micro, Small and Medium Enterprises
MT	Metric Ton
NAFTA	North American Free Trade Agreement
NBR	Acrylonitrile-butadiene rubber
NR	Natural Rubber
NT	Normal Track
OLS	Ordinary Least Square
PPML	Poisson Pseudo-Maximum Likelihood
PTA	Preferential Trade Agreement
QRs	Quantitative Restrictions
R&D	Research and Development
RE	Random Effects
RR	Reclaimed Rubber
RSCA	Revealed Symmetric Comparative Advantage
RTA	Regional Trade Agreement
SAFTA	South Asia Free Trade Area
SBR	Styrene Butadiene Rubber
SMEs	Small and Medium Enterprises
SP	Special Products
SR	Synthetic Rubber
ST	Sensitive Track
STCs	State Trading Corporations
TRQ	Tariff Rate Quota
TSNR	Technically specified natural rubber

UAE	United Arab Emirates
UK	United Kingdom
UNCOMTRADE	United Nations Commodity Trade Statistics Database
USA	United States of America
WCO	World Customs Organisation
WITS	World Integrated Trade Solution
WTO	World Trade Organisation
XSBR	Carboxylated Styrene-Butadiene Rubber

CHAPTER 1
INTRODUCTION

1.1 Background

The rule-based international trading system under the World Trade Organisation (WTO) ensured free movement of goods and services in the world. As a result, the global trade is nearly quadrupled and over half of the world trade is now tariff free (WTO, 2015; 2018c). The provision for setting up of Regional Trade Agreements (RTAs) for deeper integration of countries under the WTO further enhanced the growth in merchandise trade in the world. As of 1 June 2020, there are 303 RTAs in force. This indicates the preference of countries for deeper integration under deteriorating trade environment and trade restrictions taken by WTO members in the recent years (WTO, 2020). The expectation of increased market access through tariff preferences is the key for the formation of RTAs (Pal, 2008). Studies showed that while 42 per cent of the total value of world trade is subject to zero Most-Favoured Nation (MFN) rates RTAs has fully liberalised an additional 28 per cent of the world trade (Constantinescu et al, 2018; Espitia et al, 2018). Along with the commitments of the member countries of WTO to reduce the tariffs in a particular level, the manifold increase in RTAs for deeper integration further reduces the import tariffs and also create an incentive for member countries to lower MFN tariffs (Freund and Ornelas, 2010). Though India is a late entrant into the bandwagon of RTAs, the country reduced external tariffs considerably under its RTAs (GoI, 2020). Almost all countries in the world are now party to one or more RTAs (WTO, n.d). However, since tariffs are the major WTO compatible instrument left to the policymakers in controlling the trade between the nations, the formation of RTAs with the major objective of free trade, left the weakest segment of the value chain to the vagaries of international competition.

The history of RTAs of India started long before the establishment of WTO in 1995. The signing of the Bangkok Agreement in 1975 marked the entry of India into the RTAs (Jha, 2011). But, most of its RTAs are signed in the first decade of the twenty-first century. At present, the country is a signatory to more than twenty-five trade agreements (GoI, 2020) which included bilateral/multilateral Free Trade Agreements (FTAs), Preferential Trade Agreements (PTAs), Comprehensive Economic Partnership

Agreements (CEPAs) and Comprehensive Economic Cooperation Agreements (CECAs) with both developing and developed countries. Though most of the RTA partners of India have received preferential benefits for those items that are of export interest to them, many of the top export items of India do not received preferences under the RTAs of the country (Jha, 2011). This has resulted in substantial increase in preferential imports from the RTA partners of India than the preferential exports (Jha, 2011, Joseph and George, 2016).

The rubber industry is one sector affected by the surge in imports from the member countries of RTAs of India (Joseph and George, 2016; 2016a). Most of the items in the value chain of the rubber industry are classified for reduced duty/duty free trade with around 24 countries under twelve trade agreements. Moreover, the majority of the partner countries of these twelve RTAs are either producers or consumers of rubber and its products. The industry is important to India due to its contribution to the domestic economy and size of the dependent population. During the year 2017-18, the value of output of the rubber products, the value of imports and exports of rubber and rubber products were Rs. 87,306.94 Crore, Rs.22,355.26 Crore, Rs.19,091.23 Crore respectively (ASI, 2020; DGCI&S, 2020). While the upstream (production of raw rubber, especially natural rubber (NR)) activities of the sector are concentrating in South and North-east India the downstream activities (rubber goods manufacturing) spread across the country. In the upstream segment, NR is obtained mostly from the tree *Hevea Brasiliensis* cultivated by the rubber farmers. In the production of NR, more than one million small rubber growers are engaged with an average holding size of 0.5 hectare. Considering the strategic importance of NR the European Union's *2020 Communication on Critical Raw Materials* retains NR in its list of critical raw material and is the only biotic material included in the list. Synthetic Rubber (SR) is an artificial elastomer produced from petroleum by-products in large plants, which is not biodegradable and Reclaimed Rubber (RR) is the rubber recovered from vulcanized scrap rubber. Though India is the third largest consumer of all kinds of rubber, the country meets around half of its NR and SR consumption requirements through imports and is a net exporter of RR (Rubber Board, 2019; Rubber Board, 2020).

The rubber is an ingredient to more than 30,000 products. The application of rubber in healthcare, transportation, defence, space, etc., indicates the strategic importance of this raw material. The movement of the societies and the day to day activities even in the twenty-first century are largely depended on the availability of rubber. Though raw

rubber has applications in thousands of industrial activities ranging from the healthcare sector to space, the dominant user of rubber is continued to be the pneumatic tyres (Barlow et al, 1994; IRSG, 2019). In the downstream segment, around 3845 licensed rubber products manufacturers are operational in India (Rubber Board, 2019). The value of output of the rubber products during the period between 2004-05 and 2014-15 made up 3.77 - 5.17 per cent of the manufacturing GDP of India (ASI, 2017; GoI, 2016; RBI, 2018; Rubber Board, 2013; 2016). However, the contribution of Indian rubber industry to the different GDP sectors witnessed a declining trend in more recent years (Joseph and Jacob, 2018) and in 2017-18 it was 3.42 per cent.

While major countries in the West use official policies including import tariff and other measures to stimulate domestic rubber-based industries (Barlow et al, 1994), the signing of RTAs and resultant tariff concessions offered to different segments of the value chain of the rubber industry by India makes the imports of both raw material and finished products easy to the country. This was equally deleterious to both upstream and downstream activities of the domestic rubber industry of the country. However, a disaggregate level product-wise analysis on the impact of tariff liberalisation under the RTAs on the import of rubber and rubber products of India is missing. Since the rubber industry value chain of India consisted of more than one million rubber farmers, thousands of manufacturing units in the micro, small and medium enterprises (MSME) sector, multi-national corporations (MNCs) engaged in the production of tyres, the effect of tariff liberalisation under the RTAs on different segments of the rubber industry are varied. Therefore, a detailed product level analysis on the impact of tariff liberalisation under the RTAs of India on the growth in import of rubber and rubber products is highly relevant. It will help the policymakers to formulate appropriate domestic and external trade policies for protecting the domestic rubber industry of the country from the vagaries of international competition (Jha, 2011, Joseph et al, 2006; Joseph and George, 2016; 2016a).

1.2 Importance of the study

Since the late nineteenth century, in the international trade in raw materials and value-added goods, rubber trade (particularly NR) and its value-added products have been playing an important role. The trade in NR was equivalent to the trade in coal, wood and tobacco and in the total world raw material trade, NR was in the sixth or seventh position in value terms during the year 1937 (Bauer, 1947). Though SR, a close

substitute to NR, was first made in the late nineteenth century the outbreak of the Second World War in September 1939 and cutting off of South-East Asian supplies of NR after the Japanese invasion in early 1942 paved the way for large scale production of SR in the world (Barlow et al, 1994). The increased use of rubber in almost all industrial activities promoted the cultivation of NR mostly in Asian countries and production of SR and value-added rubber products manufacturing mostly in western countries.

Since independence, the Indian rubber sector was domestic market-oriented with a higher degree of interdependence among the constituent segments (George and Joseph, 1992). The interconnectedness nurtured under the protected policy regime witnessed a breakdown in 1991 due to the introduction of trade policy reforms in the country (Joseph and George, 2013). Consequently, the upstream activities of the rubber sector are affected by higher instabilities in prices during the post-reform phase compared to the pre-reform phase. Similarly, the downstream manufacturing activities are also affected by external shocks. The potential vulnerabilities of both the raw materials (upstream) and the value-added rubber product segments (downstream) of India in the external trade after the post-reform phase were reported earlier (Joseph et al, 2006). The major outcome has been the loss of interconnectedness among the various constituent segments which included more than one million rubber smallholdings, 107 licensed processors in the organised sector, 8078 rubber dealers and 3845 licensed manufacturers (Rubber Board, 2019).

It was at this juncture that India started signing RTAs. As a result, most of the items in the value chain of the rubber industry are earmarked for duty-free trade with around 24 countries under twelve trade agreements. The liberal tariff policy on rubber and rubber products under the RTAs led to steady increases in imports of rubber and rubber products into the country (Joseph and George, 2016). The country exports rubber raw materials worth US$ 207.94 million and imports US$ 2002.42 million in 2018-19. The value of exports and imports of value-added rubber products was US$ 2998.80 million and US$ 1710.19 million respectively (DGCI&S, 2020). However, considering the contribution of the rubber industry in the Indian economy, its strategic importance and dependence of more than one million rubber farmers, an analysis of Indian rubber industry in the context of tariff liberalisation under the RTAs is a matter to be explored in detail.

The issue assumes importance in the era of RTAs as the trade with member countries of India's RTAs accounts considerable portion of the total merchandise trade in rubber and rubber products of India (Joseph and George, 2016). Though only 12 trade agreements covered rubber or rubber products the product coverage and duty concessions offered are varied according to the nature of the agreement and the member countries involved. During the year 2018-19, while the share of RTA countries in the total merchandise trade of India was 31.51 per cent, the share of RTA countries in the total merchandise trade in rubber and rubber products of India was 47.43 per cent. In the total trade in rubber and rubber products with RTA countries, the share of import (66.58%) was much higher than that of export (25.26 %)[1]. This indicated the sensitivity of India's domestic rubber sector to the RTAs vis-à-vis other commodities. The higher share of import of India poses threat to both the upstream and downstream segments of the domestic rubber industry (Joseph and Jacob, 2018).

However, apart from the aggregate level assessments of the RTAs on rubber sector and the studies on rubber industry under ASEAN India FTA (George and Joseph, 2014; Joseph and George, 2016; 2016a), a comprehensive analysis on the tariff policies and the impact on the import of all the major tariff lines of rubber and rubber products under the RTAs of India are missing. In this context, the proposed study is an attempt to answer the following questions (i) what are the tariff-line wise policies of rubber and rubber products under different RTAs of India? (ii) How the tariff liberalisation under the RTAs affected the import of rubber and rubber products? (iii) Whether the fluctuations in the import of rubber and rubber products, if any, is related to the tariff policies of the government? (iv) How different segments of the Indian rubber industry behaved under different RTAs of India?

1.3 Objectives

Ex-post evaluation of the impacts of RTAs on merchandise trade, especially on imports, is important to draw up further necessary adjustments in domestic and international trade policies. Therefore, the specific objectives of the study are:

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[1]The figures corresponds to share of trade with countries such as: Afghanistan, Argentina, Bangladesh, Bhutan, Brazil, Brunei, Cambodia, Chile, China, Indonesia, Japan, South Korea, Lao PDR, Malaysia, Maldives, Myanmar, Nepal, Pakistan, Paraguay, Philippines, Singapore, Sri Lanka, Thailand, Uruguay and Vietnam in which India has trade agreements.

(i) To analyse the tariffs and tariff policies on rubber and rubber products of India under its RTAs

(ii) To analyse the impact of tariff policies under the RTAs of India on the import of major rubber and products, and

(iii) To highlight the policy implications based on the results of the study for the sustainable rubber industry of India.

1.4 Database sources

The study primarily used the trade data of United Nations Commodity Trade Statistics Database (UNCOMTRADE) provided by the World Integrated Trade Solution (WITS) of the World Bank. The trade data provided by (i) the Directorate General of Commercial Intelligence and Statistics (DGCI&S), Ministry of Commerce and Industry, Government of India, and (ii) INTRACEN are also used for the analysis. The data on GDP, distance, and other binary variables are collected from the World Bank and Centre for Prospective Studies and International Information (CEPII, France). Since the first trade agreement of India was signed in 1975 and the Harmonised System (HS) nomenclature of the WCO was entered into force in 1988, the trade data from 1988-2017 is considered for the study. Rubber and rubber products listed in chapter 40 of the harmonised description and coding system of WCO at the six-digit subheading level was used for the study. The chapter contains seventeen headings as listed in Table 1.1 (Detailed product description at the six and eight-digit levels with the corresponding standard rate of import duty of India as of 30.06.2020 are given in Appendix A). For the analytical purpose, product subheading-wise tariff details on rubber and rubber products under chapter 40 of the HS was collected from various notifications of the government of India. All other secondary information on RTAs were collected from the respective Trade in Goods Agreements and Schedules of the tariff commitments of the RTAs.

The WCO is used to modify the HS nomenclature every 4-6 years (George and Joseph, 2005). In the process of modification, some tariff lines may be deleted, bifurcated or merged with other tariff lines. In order to understand the changes and to collect trade data appropriately, correlation tables of harmonised systems of different versions are collected. It was found that the changes in the subheadings of rubber and rubber products are pertained to finished rubber products, particularly to the tariff

subheadings of headings under HS 4009, HS 4010, HS 4011 and HS 4012 (Appendix B). Though there were changes in the tariff subheadings of rubber and rubber products under HS 4009, HS 4010, HS 4011 and HS 4012 during its revisions, only the subheadings of HS 401191 and HS 401199 of HS 4011 are divided considerably and the long-run data were branched out. However, the combined share of newly created tariff subheadings was less than 20 per cent of the total trade of the product. Therefore, in order to capture the long-term trends in trade and implications of tariff policies under different RTAs of India on the rubber sector the study used HS 1988/92 nomenclature. The chapter 40 of the HS 1988/92 version consists 66 tariff subheadings. The trade data and tariff policies of India on all the 66 tariff sub-headings of chapter 40 of the HS 1988/92 (George and Joseph, 2005) are collected and analysed.

Tariff lines at the six-digit level of the HS grouped into raw materials (tariff subheadings under the headings HS 4001, HS 4002 and HS 4003), intermediate rubber products (tariff subheadings under the headings HS 4004, HS 4005, HS 4006, HS 4007 and HS 4008), non-tyre rubber products (tariff subheadings under the headings HS 4009, HS 4010, HS 4014, HS 4015, HS 4016 and HS 4017) and tyres and allied products (tariff subheadings under the headings HS 4011, HS 4012 and HS 4013) to focus on the conceptual basis of the tariff policies and external trade of each RTAs. In

Table 1.1. Product Descriptions of Headings under Chapter 40

Sl No.	HS Code	Product Description
1	4001	Natural rubber, balata, gutta-percha, guayule, chicle and similar natural gums, in primary forms or in plates, sheets or strip
2	4002	Synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip; mixtures of any product of heading 4001 with any product of this heading, in primary forms or in plates, sheets or strip
3	4003	Reclaimed rubber in primary forms or in plates, sheets or strip
4	4004	Waste, parings and scrap of rubber (other than hard rubber) and powders and granules obtained therefrom
5	4005	Compounded rubber, unvulcanised, in primary forms or in plates, sheets or strip
6	4006	Other forms (for example, rods, tubes and profile shapes) and articles(for example, discs and rings), of unvulcanised rubber
7	4007	Vulcanised rubber thread and cord

8	4008	Plates, sheets, strip, rods and profile shapes, of vulcanised rubber other than hard rubber
9	4009	Tubes, pipes and hoses, of vulcanised rubber other than hard rubber, with or without their fittings (for example, joints, elbows, flanges)
10	4010	Conveyor or transmission belts or belting of vulcanised rubber
11	4011	New pneumatic tyres, of rubber
12	4012	Retreaded or used pneumatic tyres of rubber, solid or cushion tyres, tyre treads and tyre flaps, of rubber
13	4013	Inner tubes, of rubber
14	4014	Hygienic or pharmaceutical articles (including teats), of vulcanised rubber other than hard rubber, with or without fittings of hard rubber
15	4015	Articles of apparel and clothing accessories (including gloves, mittens and mitts) for all purposes, of vulcanised rubber other than hard rubber
16	4016	Other articles of vulcanised rubber other than hard rubber
17	4017	Hard rubber (for example, ebonite) in all forms, including waste and scrap; articles of hard rubber

Source: World customs organisation, Brussels

the present study the term RTA is synonymously used for representing bilateral/regional Free Trade Agreements (FTAs)/Preferential Trade Agreements (PTAs), Customs Unions (CU), Comprehensive Economic Partnership Agreement (CEPA), Comprehensive Economic Cooperation Agreement (CECA), etc. The list of trade agreements of India in which rubber or rubber products are covered is given in Table 1.2.

Table 1.2. India's Trade Agreements Covering Rubber or Rubber Products

Sl No.	Agreements and Year of Entry	Member Countries	Product Coverage
1	Asia Pacific Trade Agreement (APTA) – July 1975	Bangladesh, China (joined on 2001), India, Republic of Korea, Lao PDR and Sri Lanka	Appendix C
2	India Sri Lanka FTA (ISLFTA) -March 2000	India and Sri Lanka	All products except the items mentioned in Appendix D
3	Comprehensive Economic Cooperation Agreement	India and Singapore	All products except the

	(CECA) between The Republic of India and the Republic of Singapore - August 2005		items mentioned in Appendix E
4	Agreement on South Asia Free Trade Area (SAFTA)- January 2006	India, Pakistan, Nepal, Sri Lanka, Bangladesh, Bhutan, Afghanistan and the Maldives	All products except the items mentioned in Appendix F1&F2
5	India Bhutan Trade Agreement-July 2006	India and Bhutan	All products
6	India-Chile PTA-September 2007	India and Chile	Appendix G
7	India MERCOSUR PTA- June 2009	India and Brazil, Argentina, Uruguay and Paraguay	HS 40082120
8	India Nepal Trade Treaty - October 2009	India and Nepal	All products
9	India Korea Comprehensive Economic Partnership Agreement (CEPA) - January 2010	India and Korea	All products except the items mentioned in Appendix H
10	ASEAN India Free Trade Area (AIFTA) - January 2010	India and Indonesia, Malaysia, Cambodia, Philippines, Singapore, Thailand, Brunei Darussalam , Vietnam, Laos, Myanmar	All products except the items mentioned in Appendix I
11	CECA between India and Malaysia - July 2011	India and Malaysia	Appendix J
12	India Japan CEPA - August 2011	India and Japan	All products except the items mentioned in Appendix K

For the analytical purpose, along with the member countries of RTAs of India and other major trading partners of India on rubber and rubber products, viz., UAE, Germany, France, UK, USA, Iran, Italy, Netherlands, Turkey, Russia, Australia and New Zealand are also considered. Trade with Afghanistan is not considered for the

analytical purpose due to various geopolitical issues that affects the normal trade between the nations. Therefore, altogether 36 countries are considered for analysing the impact of tariff policies under different RTAs of India on the import of rubber and rubber products. More than 80 per cent of the trade in rubber and rubber products of India was with these countries during the year 2017. The list of countries considered for the analysis is given in Table 1.3.

Table 1.3. List of Countries Considered for the Analysis

Sl No.	Country	Sl No.	Country	Sl No.	Country
1.	Argentina	13.	Germany	25.	Nepal
2.	Australia	14.	Indonesia	26.	Netherlands
3.	Bangladesh	15.	Iran	27.	New Zealand
4.	Bhutan	16.	Italy	28.	Pakistan
5.	Brazil	17.	Japan	29.	Paraguay
6.	Brunei	18.	Korea	30.	Philippines
7.	Cambodia	19.	Lao PDR	31.	Russia
8.	Chile	20.	Malaysia	32.	Singapore
9.	China	21.	Maldives	33.	Sri Lanka
10.	France	22.	Myanmar	34.	Turkey
11.	Thailand	23.	UAE	35.	UK
12.	USA	24.	Uruguay	36.	Vietnam

1.5 Methodology

The study used both descriptive and analytical methods. In order to understand major shifts in the import of rubber and rubber products of India, break-years are estimated using the structural break analysis and the growth rates of the corresponding break periods are estimated using the compound growth formula. The concentration of the export/import of rubber and rubber products is estimated using the four-country concentration method. The analysis of the RTAs, particularly, the impact of tariff policies of India on the import of rubber and rubber products was done by using Gravity modelling.

1.5.1. Break point analysis

For identifying multiple breaks in the import of rubber and rubber products, the approach developed by Bai and Perron (1998, 2003) is used. Balakrishnan and Parameswaran (2007) used the method to identify different phases of growth of India since 1950. The authors tested the structural break in the main sectors of the economy of India and explained the growth transition in India. Similarly, in the rubber sector, Siju (2017; 2019) applied the structural break analysis for understanding the breakdates in the NR production sector of India.

The growth rates of imports estimated using the exponential function

$Y = bm^t$

Where, Y is the variable for which growth rate is calculated, b = constant, m = regression coefficient, and t = time

The exponential growth model containing n+1 growth regimes and n break-dates (T1,..., Tn) can be written as follows:

$\ln Y_t = b_1 + m_1 t + u_t, \qquad t = 1,\ldots,T_1$

$\ln Y_t = b_2 + m_2 t + u_t, \qquad t = T_1 + 1,\ldots,T_2 \ldots(1)$

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$\ln Y_t = b_{n+1} + m_{n+1} t + u_t, \qquad t = T_n + 1,\ldots,T$

Here To=0 and $T_{n+1} = T$, the total number of observations. The number of breakpoints n and break dates (T1,...,Tn) are treated as unknown and estimated from the data. Balakrishnan and Parameswaran (2007), identified that the approach developed by Bai and Perron (1998, 2003) for identifying breaks in a series based on the least-squares principle common to regression analysis as best suited for the simultaneous estimation of multiple breaks. The break dates are estimated as global minimisers of the sum of squared residuals from an OLS regression of (l) using a dynamic programming algorithm (Bai and Perron 2003). The procedure is as follows.

For each n-partition $(T_1,...,T_n)$, denoted $\{T_p\}$, the associated least squares estimates of $\beta_p = (b, m)_p$ and are obtained by minimizing the sum of squared residuals

$$\sum_{j=1}^{n+1} \sum_{t=T_{j-1}+1}^{T_j} [lnY_t - b_j - m_j t]^2$$

The resulting estimates $\hat{\beta}_p$ are used to compute the sum of squared residuals associated with $\{T_p\}$. So, the estimated breakpoints $(\hat{T}_1, ..., \hat{T}_n)$ are such that

$(\hat{T}_1, ..., \hat{T}_n) = \text{argmin}_{(T1, ..., ,Tn)} S_T (T_1 ... T_n)$,

where $S_T(T_1 ... T_n)$is the sum of squared residuals the minimisation is overall possible partitions $(T_1 ..., T_n)$ such that $T_i - T_{j-1} > h$. Note that h is the minimum length assigned to a segment and T_i is the i^{th} breakpoint. For the estimation of breakdates the minimum length of a segment, h, has been fixed at 15 per cent of the total observation of 30 years from 1988 to 2017. The procedure considers all possible combination of segments and selects the partition that minimizes the sum of squared residuals. Thus the break-point estimators are global minimizers of the objective function. The statistical software package 'strucchage in R' written by Zeileis et. al. (2005) was used for the estimation of the break-years.

The compound annual rate of growth (CAGR) during the break years are estimated (Siju, 2017) using the exponential function

$Y=bm^t$

Where, Y= the variable for which growth rate is calculated.

t = time, b = constant, m = regression coefficient.

By taking natural log on both sides, the following form was arrived at:

Log (Y) = log (b) + t Log (m); this log linear function was fitted using Ordinary Least Square (OLS).

CAGR in percentage was obtained using the formula:

CAGR % = (Antilog t-1) x 100

1.5.2. Concentration ratio

To understand the concentration of export and import of India, four-country concentration (Concentration Ratio - CR (4)) is estimated using the formulae

$$CR\ (4) = \sum_{i=1}^{4} \frac{qi}{Q}$$

Where, qi represents the value of exports/imports to the ith partner country (having the largest export/import values). Q represents the total value of export/import

of the commodity group. CR (4) shows the total share of 4 countries that have the largest shares in exports/imports of a commodity group (Erlat and Akyuz, 2001). The data for estimating the four-country concentration are collected from the export-import data bank of Directorate General of Foreign Trade (DGFT), Department of Commerce, Ministry of Commerce and Industry, Government of India.

1.5.3. Gravity model

A large number of studies use gravity modelling as a tool to understand the effect of RTAs at the aggregate and disaggregate level. The higher explanatory power of the real-world data of the gravity models attracts the trade analyst to use the model widely for ex-post analysis (Plummer et al, 2010). The interconnectivity of economics, policy and geography associated with the Gravity modelling attracted most of the economists to use this modelling (Ekanayake, et al, 2010). The concept was introduced in the literature of economic analysis by Tinbergen (1962) followed by Poyhonen (1963). Since its introduction, there has been dramatic progress both in understanding the theoretical basis for the equation and in improving its empirical estimation (Salvatici, 2013; Anderson, 2011). Though initially, the model lacks theoretical background, presently extensive literature are available, which proved that the gravity equation can be derived from both the 'traditional' and the 'new' theory of international trade (Helpman and Krugman, 1985; Helpman, 1987). The model is derived from both the Ricardian and Heckscher Ohlin's (H-O) perspectives (Eaton and Kortum,1997; Deardorff, 1998). At present, the model is considered as a workhorse of international trade and it can correctly approximate bilateral trade flows (Leamer and Levinsohn, 1995). The basic form of the model says that trade between two countries is proportional to the size of the economies and inversely proportional to the geographic distance between them. While the role of size is well understood, the role of distance remains a mystery. According to Carrillo-Tudela and Li, (2004) it was Krugman (1991) who formalised the role played by the geographical closeness in bilateral trade and further explanation was given by Frankel (1997). Chaney (2013), also offers theoretical explanation for the gravity equation in international trade and explains not only why trade is proportional to size, but also explains the distance variable. The immediate consequence of geographical proximity are reduction in transport costs, short delivery time, low interest payments on export credits, low spoilage, etc. (Cheng and Wall, 2004; Linnemann, 1966 and Frankel, 1997). According to Wei and Frankel (1997) distance has an economically and statistically large effect on trade. As distance increased by 1

per cent, trade declined by 0.6 per cent. The "adjacency" dummy showed that two countries with a common land border have a larger volume of trade than two otherwise identical countries.

After the introduction of the basic gravity model by Tinbergen (1962) and Poyhonen (1963) to understand the relationships among bilateral trade flows, sizes of GDP and distances between trading countries, Aitken (1973), Thursby and Thursby (1987), and Bergstrand (1985, 1989) included dummy variables for regional trading arrangements and found that these RTA dummies were statistically significant in explaining the direction of bilateral trade flows (Otsubo and Umemura, 2003). Other variables that are commonly used in gravity models are population, dummy variables to control for cultural similarity among trade partners, language or historical relationships such as colonialism, etc. (Ekanayake, et al, 2010; Frankel, 1997; Cheng and Wall, 2004). Common language tends to facilitate trade by enhancing exporters' and importers' understanding of each others' cultures, commercial and legal systems, which have a great deal of influence on trade. Common language or past colonial connections facilitated trade; it brought in 50 per cent more trade than otherwise (Ekanayake, et al, 2010). Dummy variables took the value of one if the country pair in question had a favourable impact on trade due to these effects, and zero, if they did not (Wei and Frankel, 1997; Ekanayake, et al, 2010).

Though the gravity equation can be estimated using cross-section or panel data, the latter is preferable because, then, the effects of particular years on global trade can be controlled for (Cheong, 2010). For FTA analysis, the model allows the analyst to control for other trade-related variables and quantify any changes in a country's trade due to the FTA. The model may also yield misleading results if the data is inaccurate or important variables are omitted from the estimation (Cheong, 2010). There are a number of agreement specific and country-specific studies that use gravity modelling to understand the bilateral trade flows and to understand the effect of RTAs (Huot and Kakinaka, 2007; Lindberg and Alvstam, 2007; Kien, 2009; Rahman, 2010; Borodin and Strokov, 2015;Jayasinghe and Sarker,2008; MacPhee and Sattayanuwat, 2014; Koo et al., 2006; Karemera, et al, 1999; Renjini et al, 2017; Buongiorno, 2016; Kiani et al., 2018; Krause and Puffert, 2000; Nin-Pratt and Diao 2014).

The gravity framework is widely used for predicting the trade potentials and analysing the impact of preferential trading arrangements (Batra, 2004). The model is also suitable for analysing the disaggregate level data (Anderson, 2011). Therefore, the

present study used gravity modelling to capture the product-wise impact of tariff liberalisation under the RTAs on the growth in import of rubber and rubber products listed in chapter 40 of the harmonised system nomenclature. Tariff lines at the six-digit level (subheadings of chapter 40) of HS 1988/92 are used for the analysis. For the analytical purpose, the import data of the 66 product lines from the 36 countries during the period of 30 years (1988-2017) are collected from the WITS. Tariffs and the tariff policies of India under the RTAs are collected from the respective trade agreements and the relevant notifications of the Government of India. The GDPs of India and the 36 countries and the other binary variables are collected from the World Bank and CEPII.

Model specifications

The gravity model describes that trade flows between two countries are proportional to the product of each country's 'economic mass', generally indicated by Gross Domestic Product (GDP), and inversely proportional to the distance between the respective economic centres (usually using the distance between the capital cities). The basic form of the gravity model is

$$Tij = Yi * Yj / Dij$$

where,

Tij = Bilateral trade flows between country 'i' and 'j',

Yi &Yj = GDP of country 'i' and 'j',

Dij = Distance between the capital cities of country 'i' and country j (in km).

It is assumed that the dependent variable ie., the "normal bilateral trade" of a country from selected countries can be explained by size (GDP, population, land area) and distance (broadly defined as trade costs) between two countries. If the preferential trade arrangement increases the bilateral trade of the country above its "normal" value, then the intra-bloc dummy variable (a variable that represents the existence of a preferential agreement between two countries) will get a positive and statistically significant coefficient. The dependent variable can be either export or import values (Carrillo-Tudela and Li, 2004). There are several studies that use either value of export or import as dependent variables instead of total bilateral trade between the countries (Gómez-Herrera, 2012; Martínez-Zarzoso et al., 2007; Matyas, 1998; Oh and Selmier II, 2008; Kavallari et al., 2008; Helpman et al., 2008; Westerlund and Wilhelmsson, 2009; Rahman, 2010).

Since, normally tariffs are imposed on imports, import of rubber and rubber products of India is considered as the dependent variable. The basic model is augmented with binary variables such as (i) tariff concession (to understand the effect of tariff concession given under the trade agreements for rubber or rubber products for the member countries of India's RTAs), (ii) common language (since the countries having common language can easily do business), (iii) common colony (rubber-based industries, especially the upstream segments, are developed in countries where it is introduced by colonial powers, therefore it is expected that the variable will provide adequate information about the colonial characteristic of import of rubber or rubber products into India), and (iv) common border (there is a notion that countries which are geographically closer may trade more, in order to understand whether India imports more rubber or rubber products from its neighbouring countries, the variable is included in the study). So, the basic gravity model becomes the following form

$$\ln M_{ijt} = \beta 0 + \beta 1 \ln GDP_{it} + \beta 2 \ln GDP_{jt} + \beta 3 \ln Dist_{ij} + \beta 4 \text{tariff concession} + \beta 5 \text{ common language} + \beta 6 \text{ common colony} + \beta 7 \text{ common border} + u_{it}$$

where,

$\ln M_{ijt}$ = Natural logarithm of nominal values of import of countries 'i' from country 'j' in time 't',

$\ln GDP_{it}$ and $\ln GDP_{jt}$ = Natural logarithm of GDP of countries 'i' and 'j' in time 't',

$\ln Dist_{ij}$ = Natural logarithm of the bilateral distance between countries 'i' and 'j',

Common border = Binary variables that take the value "0" if the trading country has no common border and "1" if the countries have common border,

Common language = Binary variables that take the value "0" if the trading countries has no common language and "1" if the countries have a common language,

Tariff concession = Binary variables that take the value "0" for not giving tariff concession and "1" for tariff reduction/elimination,

Common colony = Binary variables that take the value "0" if the trading countries has no colonial history and "1" if the countries have common colonial history

u_{it} = Error-term, which is assumed to be normally distributed with zero mean and constant variance for all observations and to be uncorrelated.

Whether bilateral trade volume should be expressed in nominal or real terms was an issue of debate among economists. Shepherd (2013) suggested that trade flows should be in nominal, not real terms because deflating exports using different country-specific price indices, such as the CPI or the GDP deflator, would produce misleading results and would not adequately capture the observed multilateral resistance term (MRT) (Ma, 2015). Other reasons for not converting the nominal values into real values are listed by Grant and Lambert (2008) are: (i) purchasing power parity rates are subject to large measurement error Srinivasan (1995), (ii) Frankel (1997) found little difference in the gravity equation results when using real data. Moreover, time fixed effects control for inflationary pressures and the growth in world trade over the sample period. Therefore, it is now widely accepted that nominal variables should be used (Salvatici, 2013). However, choosing the best model depends on the dataset, and a lot of robust tests (Kareem, 2013).

To assess the robustness of the results, three estimation methods are used initially: Ordinary Least Squares (OLS), Fixed Effects (FE) and Random Effects (RE). Hausman test is used for selecting between RE and FE models. Subsequently, tests for autocorrelation and heteroscedasticity are done. The modified Wald test (Greene, 2000) was applied to find out group-wise heteroscedasticity and the Wooldridge test was implemented to find serial correlation in the idiosyncratic errors of linear panel–data model (Drukker, 2003). Autocorrelation and heteroscedasticity were present in most of the cases of the products, therefore, in order to obtain consistent and efficient estimators, the panel data are estimated mostly by the Feasible Generalized Least Squares (FGLS) method, and the results obtained are used for the interpretation of the effect of tariff liberalisation under the RTAs on the growth in import of rubber and rubber products of India. In some products cases, Random effects Generalized Least Squares (RE GLS) regression is used. STATA 12 version is used for gravity modelling.

1.6 Outline of the thesis

The present chapter is followed by a chapter on review of literature. In the third chapter, tariff policies under the WTO regime and the tariff policies of rubber and rubber products of India under multilateral and regional trade agreements are explained. A detailed analysis on the tariff policies pursued under various trade agreements of India on rubber and rubber products are given in the chapter. In the fourth chapter, tariff policies and trade performance of rubber raw materials such as NR, SR and RR under different RTAs of India are analysed and reported. Followed by this, in the fifth chapter,

the trade performance of the intermediate rubber products (which are either used as a consumer good or used to produce a finished rubber product), in the backdrop of tariff policies pursued by India under the trade agreements are analysed and presented. The focus of the sixth chapter is the analysis of non-tyre rubber products sector. The seventh chapter presents the results of the analysis of tariffs and trade of tyres and allied rubber products. The concluding observations of the study are given in the eighth chapter.

CHAPTER 2
REVIEW OF LITERATURE

This chapter briefly reviews theoretical development and empirical studies in international trade and regional trade agreements. It also covers a brief review of studies on RTAs of India and studies pertaining to rubber and rubber products.

2.1 International trade theories and regionalism

International Trade is the exchange of goods and services between people or entities in different countries and the theories that analyse and explain the pattern of international trade consists of the subject matter of international trade theories. Generally, international trade theories are classified into classical and modern theories. The major difference between the classical and modern theories of international trade is on its focus. While the focus of the classical theory was on 'country', the focus of the modern trade theories was on 'firms'.

The classical theories of international trade start with mercantilism in the mid-16th century which encourages exports and discourage imports for increasing the country's gold and silver (Saylor Academy, 2012; UKEssays, 2018; LaHaye, 2019). It was believed that the countries which had more treasures in the form of gold and silver were the successful nations (Saylor Academy, 2012; UKEssays, 2018). According to the theory, domestic employment can be maximised by exporting finished goods and importing raw materials (UKEssays, 2018; LaHaye, 2019). It was Adam Smith in 1776 in his 'The Wealth of Nations' argued that the countries should specialize in the production of goods for which they have an absolute advantage and then trade these for goods produced by other countries (UKEssays, 2018). The theory explained why free trade with minimal government intervention is beneficial to a country (UKEssays, 2018; LaHaye, 2019).

Thereafter, Ricardo builds his theory of comparative advantage in which he argued that a country should produce and export those goods and services for which it is relatively more productive than other countries and import those goods and services for which other countries are relatively more productive than it is (Singh, 2008).

According to the theory of comparative advantage even if one country can produce all goods more cheaply than another country, both nations can still trade.

Heckscher-Ohlin refined the theory of Ricardo and argued that comparative advantage arises from differences in national factor endowments. However, the traditional international trade theories explain that all nations can benefit from free trade, and intensification of trade between states may produce improvements in the level of welfare among them (Estupiñán, 2017).

This approach of classical international trade theories leads to multilateral trade negotiations and the MFN (most-favoured-nation) concept (members to give equal treatment with regard to trade barriers to all GATT members) under the General Agreement on Tariff and Trade (GATT) in 1947. Moreover, as per Article XXIV of the GATT, provisions for the formation of RTAs are also given for the closer integration between the economies of the countries parties to such agreements. It provides exceptions to the MFN principle and allows countries to form customs unions or free trade areas (FTAs) that may discriminate against non-members of the bloc. The very idea was the intensification of trade between states. This fundamental difference in multilateralism's reliance on non-discriminatory trade policies and regionalism's reliance on discriminatory trade policies has led to a multitude of trade agreements in the recent past (İncekara and Ustaoğlu, 2012).. Different types of RTAs are described in Table 2.1.

The general notion about the trade agreements till the 1950s was that liberalisation of trade rules under the agreements will be beneficial for international trade and thereby increases the welfare of the nations (Plummer et al., 2010). The concepts "trade creation" and "trade diversion" introduced by Viner (1950) explains that forming trade agreements has both trade creation and diversion effects and does not necessarily improve members' welfare (Chandran, 2009). Trade creation indicates that the welfare of the participating countries will increase due to the reduction in tariff barriers and resultant lower prices. Trade diversion occurs when a low-cost producer outside the RTA is replaced by a high-cost partner country due to the formation of an RTA. He explained that the welfare of the member countries of the union will increase

Table 2.1. Types of Regional Trade Agreements

Sl No.	Type	Characteristics
1.	Preferential Trade Agreements (PTAs)	Member countries do not eliminate the barriers among themselves. Also, do not share common external trade barriers.
2.	Free Trade Agreements (FTAs)	Free trade of goods and services, removing tariffs and quotas within the group. For the non-members the trade policies of each member will be applicable
3.	Customs Unions	Free trade among the member countries and common external tariffs for countries outside the group.
4.	Common Markets	Customs unions including a free flow of factors of production (capital and labour).
5.	Economic Union	Common market with harmonised economic policies and single currency

Source: Das (2001)

when the trade expands due to the abolition of the import tariff and reduction in welfare will be due to the behaviour of importers from shifting the source from cheap world sources to expensive priced member country sources after tariffs dropped to zero. The Viner model thus shows that the net welfare effect of an FTA on an importing country is ambiguous (Plummer et al., 2010). According to Viner, the policymakers should focus on the net welfare effect of a particular sector in an FTA when judging it. The welfare effects of an agreement will be positive if

(i) the closer the partner country's and outsider's prices are;

(ii) the higher the home country's initial import tariff is;

(iii) the smaller the home country's initial imports from the outsider are compared to the expected increase in imports from the partner country;

(iv) the more responsive home supply and demand, and therefore import demand, are to a price drop; and

(v) the more countries there are participating in the FTA because it is more likely that a partner country's price is closer to the outsider's price (Plummer et al., 2010).

However, according to Grossman and Helpman (1995), the RTAs will be trade creators when the objective of the countries are economic wellbeing and will be trade diverting when the governments are influenced by special interest groups. The major deficiencies of Viner's model are (i) it is a partial equilibrium model, and (ii) it fails to explain the large blocs (Chandran, 2009).

Meade (1955) improved Viner's model with multiple markets and commodities and admits the possibility of spill-over effects of regional integration agreements on non-member countries. The focus of the model was on the economic welfare of the world economy, and to ensure full equilibrium, the model relied on macroeconomic policies. Further, he argued that if demand is allowed to be more elastic, a customs union may increase the degree of trade even under the conditions of trade diversion. The gains from the expansion of trade will offset the loss that results from the diversion of existing trade. He observed that though the formation of the trade agreements may reduce the collection of import duties it will offset the gains realised from the expansion of trade (Kimbugwe et al., 2012). According to Meade, for a small union, for the stability of the agreements, the distribution of economic gains among member countries is extremely important.

Lipsey (1957) also argued that Viner has concentrated only on the production side effects. If the consumption effect is considered, the relative price advantage due to the reductions in tariffs will lead to increases in consumption of products of member countries in the RTA region, while reducing the consumption from countries outside the union. In effect, when consumption effects are allowed for, the argument of Viner that trade creation is 'good ' and trade diversion is 'bad' is no longer valid. Hence, trade diversions are not always reducing the welfare of the countries (Peiris, 2015). The theory of Second Best of Lipsey and Lancaster (1956) implied that reducing tariffs on a discriminatory basis may not improve welfare for individual countries or the world economy because some tariffs are maintained. It states that 'for distorted economic systems, eliminating one set of distortions does not guarantee an improvement of overall economic welfare so long as other economic distortions remain unchanged'(Kimbugwe et al., 2012). Lipsey (1960) also opined that a customs union might have a number of negative welfare effects and may not always raise the welfare of the countries. Lipsey (1970) based on the small union model of Meade reported that a regional integration agreement that reduces the tariff on a partner country's goods is more likely to be beneficial than one that eliminates the tariff entirely.

Wonnacott and Wonnacott (1981) pointed out that a group of small countries may gain from an FTA rather than unilateral trade liberalization if non-members have high trade barriers against them or the group faces high transport costs in exporting to non-member countries of an FTA. According to him, an FTA produces gains for its

members if access to a partner's market is relatively more valuable than access to outsiders' markets.

The multiple good models of Lloyd and Maclaren (2004) and Kemp–Wan (1976) produces a rich set of analytical results about the welfare consequences of RTAs (Plummer et al., 2010). In order to evaluate the welfare impact of an FTA, Lloyd and Maclaren (2004) presented a useful multiple good model. The model applies to the general neoclassical economy, which is essentially founded on optimizing behaviour by all agents (Lloyd and Maclaren, 2004). According to Plummer et al., (2010) the model is also valid for production structures with traded intermediate inputs and specific and nonspecific inputs. As per the model, RTA increases welfare if there is an increase in the volume of trade and will reduce the welfare if there is an increase in the international prices of imports or a fall in the international prices of exports (Plummer et al., 2010).

The Kemp–Wan theorem (1976) suggested that theoretically formation of RTAs that maintains or improves the welfare of its individual members, creates a net improvement for the group, and does not harm the rest of the world, provided (i) countries in the regional agreement need to implement a set of external tariffs such that the imports from outside countries do not change (ii) the regional agreement would have to embrace total internal free trade, thereby leading to greater efficiency through trade creation and (iii) since it is theoretically possible that some countries in the regional agreement would be worse off with this arrangement (e.g., depending on the effects of the external tariffs), there would have to be a compensation mechanism, such that any country that loses would have to be fully compensated.

Economists such as Vanek (1965), Ohyama (1972), DeRosa (1998) and Baldwin (1993) also looked into various theoretical aspects of regionalism. While some argued and empirically proved that the RTAs have strengthened multilateralism and considered it as a building block of multilateralism (Trotignon, 2010; Baldwin, 2004; Frankel, 1997) others argued that regional integration is a poor substitute for multilateral trade liberalization (Bhagawati, 1992; Bhagawati and Panagaria, 1996; Panagaria, 1995, 1996, 2000; MacPhee and Sattayanuwat, 2014), and gives larger gains to the bigger nations (Ghosh, 2002). Though theoretically, there are sufficient conditions for welfare enhancement under the RTAs due to the liberalisation of the trade rules, the signing of RTAs does not often improve the welfare of the nations (Kemp and Wan, 1976; Freund and Ornelas, 2010). Several RTAs fails to create trade

as envisaged (MacPhee and Sattayanuwat, 2014). The gains from trade liberalisation such as resources flowing to their most productive uses and lower consumer prices very often not guaranteed under the RTAs due to the preferential tariff liberalisation under the RTA (Freund and Ornelas, 2010). Panagaria (2000) strongly argued for multilateralism and suggested various measures such as moratorium for new RTAs, modification of article XXIV of GATT, etc. However, in reality, the number of RTAs in the world has been increasing at a faster pace.

In order to understand why countries are eager to liberalise their economy regionally than multilaterally, Baldwin (1993) developed the Domino theory of Regionalism. According to the theory, closer integration within an existing bloc will harm the profits of non-member exporters, thus stimulating them to boost their pro-membership political activity (Baldwin, 1993). This will prompt some non-member countries to join the bloc and enlarge it. As a result, the cost to the non-member countries will increase. This will result in further enlargement of the bloc and fast spreading of Regionalism across the globe.

Moreover, the Juggernaut theory says that liberalisation of trade rules will lead to more trade liberalisation and eventually liberalise the sectors which covered in the tariff-cutting talks (Baldwin and Robert-Nicoud, 2005). In this process of liberalisation, the LDCs and the weaker sectors of the economy will be the most affected. However, the regionalists argue that apart from the traditional gains to a small developing country from an RTA with a large developed economy the regionalism offers non-traditional gains such as guaranteed access to the large market, shield the developing country from administered protection of the rich country, and credibility to their reform process (lock-in effects) (Chandran, 2009).

While the traditional trade theorists focus was on the exchange of goods, prices, production structures, and the sectoral allocation of factors of production, the new international trade theorists argue that economies trade and specialize to take advantage of increasing returns and lower costs, not subsequent differences in factor endowments that traditional trade theory addresses (Chandran, 2009; UKEssays, 2018). The trade agreements also act as an alternative to prevent trade wars (Maggi and Rodriguez-clare, 2007). However, modern day regionalism is an outcome of the efforts of countries to increase trade by the liberalisation of the trade rules and its welfare effects can be explained by using the trade creation and trade diversion analysis with ex-ante and ex-post econometrical methods.

The concepts of 'shallow integration' and 'deep integration' were introduced by Lawrence (1997). Shallow integration implies only the tariffs are changed after the trade agreement, and Deep integration implies further change in 'other barriers' such as integration of different national practices with common rules. These national practices may include competition policy, product standards, tax policy, administrative procedures, investment policy, and labour or environmental standards. Deeper integration is currently becoming more important than simple shallow integration (Hosny, 2013).

Balassa (1962), and Cooper and Massell (1965) introduced dynamic effects into the analysis of the welfare effects of economic integration, as a more efficient economic reason or rationale behind the formation of customs unions. While the focus of old regionalism (static model) was the trade in goods, the new regionalism is represented by dynamic effects such as increased competition, investment flows, economies of scale, technology transfer, and improved productivity. The focus of the new regionalism are (i) export orientation (ii) market allocation of resources (iii) led by private firms, and (iv) covered all goods, services and investment (Lawrence, 1997; Hosny, 2013).

However, for trade in goods, the major component which will significantly liberalise under the RTAs are the tariffs. The applied tariffs of the participating countries under the RTAs will be lower than the MFN tariffs under the WTO, depending on the type of the agreement. Though there are strong cases for trade creation among the member countries of RTAs the pertinent question is how the increased import from an efficient producer will affect different sectors of the value chain of a less efficient producer and LDCs. A prerequisite to understand the effect of tariff liberalisation on the weaker section is to understand the effect of tariff liberalisation at the disaggregated level. In other words, only a product level analysis of tariff liberalisation on the import will guide the policymakers to identify the effect of RTAs on different sectors of the economy.

The two important modelling methods in estimating the economic effects of an FTA are (i) computable general equilibrium (CGE) models, used in ex-ante assessments, and (ii) gravity models, used in ex-post assessments. Piermartini and Teh (2005) provided non-technical explanation to the two trade policy models. He explained the theoretical underpinning, model requirements and computational procedures required for these models.

The essence of general equilibrium models is that supply and demand are balanced. It captures demand and supply in each sector and the linkages among sectors. The model has both exogenous (correspond to the trade policy variables, elasticities, and share parameters) and endogenous (such as prices, import and export volumes, household income, tariff revenue, consumer surplus, and producer surplus) variables. Firms, consumers, and government are the three agents of the model. Firms produce output, which is purchased by consumers and the government and are profit maximizers. Consumers are often modelled with reference to a representative household and the government administers only market-related policies, such as taxes, subsidies, trade tariffs, and quotas. Since economic theory only provides qualitative conclusions, which are sometimes ambiguous CGE models are used to evaluate the effects of trade policy that can quantify the magnitudes of the effects identified by theory (Plummer et al., 2010).

The gravity model is widely used in trade analysis due to its high explanatory power of real-world data. The model attempts to explain bilateral import demand with a variety of explanatory variables including binary variables. Using the model we can estimate whether or not an FTA has had a statistically significant effect on trade flows. Though the model has wide acceptance as an ex-post method to analyse FTAs, the policymaker needs to be careful while interpreting the results of gravity model estimations. The results of the analysis depend on (i) the quality of the data (ii) model specification, and (iii) since the binary variables are extremely basic indicators of regional integration policy, they do not capture the breadth and depth of an FTA (Plummer et al., 2010).

2.2 Empirical analysis on RTAs

The analysis using the aggregate trade data on the trade flow effects of the RTAs showed conflicting results across trade agreements (Grant and Lambert, 2008). Krugman (1991) while analysing the bilateral and regional trade liberalisation initiatives notes that the welfare increase will be the largest when the world moves towards free trade under a single trade agreement that includes all the countries. Since most agreements are among natural trading partners, the likelihood of trade diversion will be small.

An analysis of the RTAs of South Asia also showed that the proliferation of bilateral trade agreements within the region helped in expanding regional trade (Dembatapitiya and Weerahewa, 2015). In addition to the trade gains, the RTAs are even helpful to promote peaceful political relationship between the countries involved in the agreements (Martin et al., 2012). Moreover, while assessing the trade potential and trade benefit of South Asian economies, Akther and Ghani (2010) observed that, in the region, the potential for trade creation exists. Corbo (1997) analysed the trade reform and tariff reductions process evolved in Chile over time and found that the trade reforms dramatically changed the growth performance of the country during the 1990s.

Another analysis (DiCaprio et al., 2017) on regional integration and development shows that integration leads to higher economic growth and lower within-country inequality in member countries. They observed that gains from economic integration vary across developing country regional groups with developing Asia benefiting on par with the developed world. The study also observed that the developing countries are now more active in RTAs and the integration leads to higher economic growth and lower within-country inequality in member countries. A positive relationship between trade liberalization and growth was also found by Wacziarg and Welch (2003); Haveman et al. (2001); Thirlwall (2000) and Frankel and Romer (1999).

MacPhee and Sattayanuwat (2014) analysed twelve major RTAs and the results obtained were not favourable to regional integration as a substitute for multilateral trade liberalization. The study also found that for the developing countries several RTAs failed to generate intra bloc trade creation. No significant change in intra-bloc trade was observed in the case of ASEAN (Venkatesh and Bhattacharyya, 2014). Rodriguez and Rodrik (1999); Cruz (2008) and Dee (2007) were also sceptic on the role of trade or openness per se in stimulating growth under regional integration.

While analysing the developed country's RTAs, Pal (2008) opined that the gains from North-South RTAs are doubtful and the formation of South-South RTAs may be more beneficial to developing countries for expanding their market. He also upheld the view that geographic and cultural proximity will benefit more for the south-south trading blocs for developing their industries. The analysis also raises apprehensions about the marginalisation of the weakest under the RTAs. Freund and Ornelas (2010) analysed the RTAs both theoretically and empirically and found neither widespread trade diversion nor stalled external liberalization.

Sector-wise analysis also showed conflicting results. Grant and Lambert (2008) analysed the agricultural trade under the RTAs and found that RTAs increased agricultural trade considerably compared to non-agriculture trade. The study found that RTAs increased its members' agricultural trade by 72 per cent compared to just 27 per cent increase in non-agriculture trade.

Koo et al. (2006) analysed the impact of RTAs on agricultural trade and found that the RTAs are instrumental in increasing the trade volume among the member countries through both inter-and intra-industry trade and are welfare-enhancing with respect to agriculture for both member and non-member countries. The benefits are greater for member countries than for non-members. Since the trade agreements are not harmful to non-member countries, the trade agreements will improve global welfare by increasing agricultural trade volume among member countries.

Since countries prefer regionalism over multilateralism Kandogan (2008) analysed the rationale for forming RTAs empirically. The results of the study indicated that the net benefits are exclusive to RTAs with partners that are relatively wealthy and similar in factor endowments, seriously limiting the options for regional integration for many countries. The results of the study also showed that there is support for the theory of Natural Trade Partners when geographical distance or initial trade volumes are used to define naturalness. Though Frankel et al. (1995) examined the natural determinants such as proximity, sizes, GNPs/capita, common border, common language in the formation of RTAs the results of the analysis favoured the 'natural' trade bloc formation. This argument was challenged by Bhagwati and Panagariya (1996). According to them, the volumes are not necessarily good predictors of diversion, and that comparative advantage can change over time. Krishna (2003) also found that neither geography nor trade volume is significantly correlated with welfare gains.

Conversely, Baier and Bergstrand (2004) support the natural trading blocs view. They develop a general equilibrium model to determine which country pairs would gain the most from forming RTAs and found that the likelihood of an RTA was larger, the closer the two countries are to each other, the more remote they are from the rest of the world, the larger their GDPs, the smaller the difference between their GDPs, the larger their relative factor endowment difference, and the wider the (absolute) difference between their and rest of the world's capital-labour ratios (Freund and Ornelas, 2010).

Jayasinghe and Sarker (2008) done an analysis using disaggregate level trade data of agri-food products under the North American Free Trade Agreement (NAFTA)

and found that the agreement was helpful in promoting trade between the member countries in six selected agri-food products. Karemera, et al. (1999) analysed economic integration under the pacific rim and found that the membership in the ASEAN significantly increased trade creation among members as well as fostered trade diversion from members to non-members and the impact of membership in the NAFTA on trade flows in the Pacific Rim is limited and appears to be commodity specific.

Nin-Pratt and Diao (2014) analysed the agricultural trade of southern Africa and found negative welfare results for regional importers because of the increased imports from inefficient regional producers, who are the major beneficiaries of the agreement. Chala and Lee (2015) analysed the effects of RTAs on bilateral Foreign Direct Investment flows and found that common membership in RTAs discourages greenfield investment in Organization for Economic Co-operation and Development-high income country pairs whereas they promote non-high income country pairs.

Another study on the impact of the ASEAN agreement on the poverty reduction of Laos shows that though Laos is benefited due to the agreement, it has also resulted in an increase in its trade deficit (Kyophilavong et al., 2016). The study also observed that the beneficiaries of ASEAN FTA might be limited to households that have access to land, irrigation, road and electricity. In effect, the effects of RTAs on member and non-member countries are different for different agreements (Ghosh, 2002).

However, the focus of the majority of the studies on regionalism was centred around its overall impacts on the economy of the member countries and its impacts on the process of multilateralism. Most of the analysis used partial or general equilibrium framework. The Gravity Model and the Computable General Equilibrium (CGE) model are the two trade models that are extensively used in the empirical studies on RTAs (Chandran, 2009). The gravity model (detailed discussion on the model is presented in Section 1.5.3 of Chapter 1) which is widely used in the empirical research, for ex-post analyses, borrowed from the Newtonian law of gravity can use as a benchmark to estimate a variety of hypotheses regarding trade and is the only model which addresses the issue of distance and trade flow (Bhattacharyya and Banerjee, 2006).

2.2.1 Regional trade agreements and India

India signed its first trade agreement in 1975, much before the establishment of WTO. In the initial phase of economic integration under the WTO regime, India entered into trade agreements with developing and least developed countries which were mainly

confined to trade in goods. The recent trade agreements of India with countries, such as Japan, Singapore, and South Korea, covered a broad set of areas and are more comprehensive. India's trade policy has a marked shift towards regionalism with the signing of many regional trade agreements (RTAs) Jha (2011). He also found that exporters are using the India-Sri Lanka Free Trade Agreement more than other RTAs (Jha, 2011). Studies on RTAs of India also exhibited conflicting results. The results of analysis of the impact of selected FTAs of India and regulatory quality on the efficiency of exports and imports from 2000 to 2014 indicates that India's bilateral FTAs and its FTA with the ASEAN group help in improving the export and import efficiency respectively (Kumar and Prabhakar, 2017). Conversely, according to Saraswat et al. (2018), evidences from recent FTAs of India suggest unfavourable gains to the trade partners and worsening the trade balances with partner countries.

Though there are sector-specific and agreement specific studies, most of the studies were focused on the analysis of the India-ASEAN trade agreement as it is the largest trade agreements of India in terms of the number of countries involved and coverage of products. Bhattacharyya and Mandal (2016) found that though ASEAN has benefitted more on trade and tariff concessions under the AIFTA the welfare effect has been symmetric during the initial years and thereafter exhibited declining tendency, mainly due to external factors. Implications of AIFTA on different sectors of the economy of India have been studied in detail by Pal and Dasgupta (2009), Harilal (2010), Veeramani and Saini (2010; 2011).

Veeramani and Saini (2011) analyses the impact of the AIFTA on plantation commodities – coffee, tea and pepper – and found that the agreement may cause significant increase in India's imports of plantation commodities from the ASEAN countries, which is mostly driven by trade creation rather than trade diversion. The study also argued that though the proposed tariff reduction under the agreement may lead to a loss in tariff revenue to the government of India the gains in consumer surplus outweigh the loss in tariff revenue and will lead to a net welfare gain.

Harilal (2010) provided an overview of AIFTA with special focus on plantation sector and raises concern over the short-run fluctuations and long-term movements in relative prices of primary commodities. The impact of AIFTA on tea was analysed by Nagoor and Nalin (2010) and found that India is in a disadvantageous position under AIFTA. The impact of AIFTA on dairy trade was analysed by Mondal et al. (2012) and found that the agreement will generate an additional scope for India to increase its dairy

exports to ASEAN countries and the threat of import from ASEAN countries to India is minimal. Chandran and Sudarsan (2012) studied the likely impact of AIFTA on India's fisheries trade and found that the reduction in tariff will have a trade creation effect, an improvement in welfare and a limited tariff revenue decline. The study also found that the AIFTA may not lead to large-scale import of marine products into the country from the member countries of ASEAN.

The study by Sikdar and Nag (2011) showed that India experienced a welfare loss under AIFTA due to both allocative inefficiency and negative terms of trade effect. Another comprehensive study on AIFTA indicated that the neglect of the development needs of domestic agriculture and the manufacturing base for the expected gains in service sector liberalisation with ASEAN is likely to make India's employment and livelihood issues even more challenging (Francis, 2011). Conversely, the results of the analysis on the overall agricultural trade potential between India and ASEAN countries showed that partner's income and free trade agreements are positively influencing the bilateral trade (Renjini et al., 2017). It is also found that intermediate goods are the most affected segment due to AIFTA both favourably and adversely (Bhattacharyya and Mandal, 2014). Chandran (2018) also opined that there is a possibility of greater trade between India and ASEAN countries under AIFTA. However, the impact of a trade agreement must be analysed and settled empirically (Burfisher et. al., 2001).

2.2.2 RTAs and Indian rubber industry

The value chain of the Indian rubber industry consists of more than one million rubber farmers, hundreds of processors and thousands of rubber product manufacturers. The industry's forward and backward linkage effects were explained by George and Joseph, (1992) in detail. However, though the first attempt to analyse the policies for protecting the domestic rubber sector of the country and the canalised NR imports through state trading corporations (STCs) of India was done by George et al, (1988) the preliminary attempt to elucidate regional dimensions of rubber consumption and trends in the external trade of major rubber products was done by Mohanakumar and George (1999). Though the study considered only two trade agreements for the analysis, it indicated the threat of import of rubber and rubber products into the country.

Thereafter, George et al. (2003) attempted to analyse the tariff policies of rubber and rubber products. Along with the structural and sectoral compositions of world exports of rubber and rubber products, the study analysed tariff policies on selected rubber and rubber products in the major NR producing and industrially advanced

countries. The results of the study shows existence of lower tariff barriers in the rubber and rubber products sector in selected developed countries compared to the NR producing countries (George et al., 2003). However, further explanations of the observed pattern of tariff policies and its effect on trade are missing in the study.

Thereafter, Joseph et al. (2006) analysed the trends in external trade in rubber and rubber products during the period 1987-88 to 2003-04 and exposed the vulnerabilities of Indian non-tyre rubber products manufacturing industries under the RTAs. The focus of the study was the performance of the balance of trade of India in rubber and rubber products over the years. In the context of deteriorating balance of trade in rubber and rubber products and growing engagements of India in RTAs, the study suggested more detailed investigation and interventions at the product subheading levels.

Later, Joseph and George (2016a) analysed the trends in external trade of rubber and rubber products of India under the RTAs during the period 2000-01 to 2014-15 and found that though India provided ample protection to its NR production sector under various RTAs (except under Asia Pacific Trade Agreement (APTA) and for less developed countries under the South Asian Free Trade Area (SAFTA)) the total value of imports of NR under the RTAs grew at a rate of 39.5 percent. The results of the study also indicated widening negative balance of trade in rubber and rubber products. But the study confined only to the analysis of balance of trade of rubber and rubber products of India under its trade agreements.

In an analysis of the tariff policies of rubber and rubber products under the ASEAN India Free Trade Agreement (AIFTA), George and Joseph (2014) explained that the categorisation of tariff lines under six different groups is the most crucial component governing tariff policy and the implementation period. Another attempt to understand the early indication of the ASEAN-India FTA on India's rubber sector (Joseph and George, 2016) showed that in the post-AIFTA phase, though India's favourable balance of trade in finished products registered marked improvements with ASEAN (89.5%) and the world (66.5%) the increasing imports of raw materials, especially NR, has nullified India's historically inherited advantages in the external trade in finished rubber products. Moreover, the study also highlighted the need for identifying structural infirmities in various segments and to implement interlinked policy measures for raw material, intermediate and finished products segments (Joseph

and George, 2016). The focus of the analysis was the balance of trade of India with ASEAN and the results were based on the trends in the balance of trade.

In the context of growing import and widening negative balance of trade in rubber and rubber products of India, Joseph and Hari (2019; 2019a) attempted to understand the export potential of rubber and rubber products of India and found that (i) among the seventeen product groups only three product groups exhibited comparative advantage in export to the world market, and (ii) no considerable change after the establishment of AIFTA in the pattern and specialisation in exports of rubber and rubber products from India to ASEAN. Though the studies on RTAs specific to the rubber industry of India indicated the growth in import from RTA member countries and widening of the negative balance of trade, none of the studies attempted a disaggregate level, tariff line-wise analysis in a comprehensive manner to understand the effect of tariff liberalisation under the RTAs on the import of individual products.

In sum, the earlier studies on India's external trade in rubber and rubber products and RTAs were primarily focused on analysis of the trends in the external trade of rubber and rubber products, sector-specific policies, or were focused on specific trade agreements, tariff policies and challenges of India's NR production segment (Mohanakumar et al., 1994; Joseph et al., 2006; Mohanakumar and George, 2001; George et al., 2002; George and Joseph, 2014; Joseph and George, 2016; 2016a; 2016b; 2013; 2013a) and most of the studies on Indian rubber industry showed RTAs of India causes an increase in imports and thereby negatively affected the domestic rubber industry and widen the balance of trade of India on rubber and rubber products. In almost all earlier studies on the external trade of rubber and rubber products of India, the product level analysis on the impact of tariff policies on the imports from the member countries of India's RTAs are missing.

2.3 Major observations

The review of literatures on RTAs shows that though the multilateral approach is the most acceptable form for international trade liberalisation and negotiations, the prominence of RTAs are increasing day by day. However, the studies on RTAs are still revolved around its trade creation and trade diversion aspects. Moreover, empirical studies on RTAs showed varied impacts on different sectors and economies. However, most negative impacts on RTAs are on the weaker section of the value chains and LDCs.

Though India is a late entrant into the bandwagon of RTAs and has signed only a limited number of RTAs, the country cannot stay away from signing of RTAs to protect its geopolitical and economic interests. However, in this process of joining RTAs a thorough understanding of the impacts of the existing trade agreements, especially on the growth in imports, are necessary for formulating policies for strengthening domestic industry for competing with external competitors both in the domestic and export markets. Though most of the empirical analysis on RTAs of India exhibited conflicting results across different sectors of the economy several ex-post analysis indicated that imports, especially under the AIFTA, are on the rise. In this context, in order to identify the weakest sectors of the value chain, a disaggregate level analysis is highly warranted. Therefore, the present study is an attempt to understand the effect of tariff liberalisation under the RTAs of India on the import of rubber and rubber products at the disaggregate level.

CHAPTER 3

THE TARIFF POLICIES ON RUBBER AND RUBBER PRODUCTS OF INDIA

The major objective behind forming an RTA is the liberalisation of trade rules, mainly tariffs. Therefore, any meaningful analysis of the impacts of RTAs will be incomplete without understanding the tariffs and tariff policies. This chapter discusses tariffs and tariff policies of India under multilateralism and regionalism. The first section of the chapter provides a brief analysis of the tariffs and tariff policies of the agricultural and non-agricultural sectors under the WTO. In the second section, a detailed analysis of the tariff policies on rubber and rubber products of India under the WTO is given. In the third section, India's tariff policies on rubber and rubber products under different types of trade agreements are discussed.

3.1 Tariffs under the WTO regime

Tariffs and tariff policies are as old as human civilisations which have trading activities. The development of modern customs and tariffs can be traced back to ancient civilizations including the one existing in the Indian sub-continent. The main difference of customs duties in ancient times from the later periods were (i) it was not levied on ad valorem, and (ii) they were discharged voluntarily (Asakura, 2003). The WTO defines tariffs as customs duties on merchandise imports. It is one of the most important and accepted instruments under the WTO regime, limiting the market access of a country in a foreign market. This is the only factor that can easily target and bring under a common rule among the factors limiting the market access globally[2]. The economic, political and environmental factors are the major determinant of the tariff policy of a product in the modern era (Kou et al., 2001).

Tariffs plays an important role in the external trade performance of a country. The multilateral trade negotiations under the WTO are instrumental for tariff liberalisation activities the world over. Though under the pre and post WTO periods tariff policies of the agricultural sector and non-agricultural sector differ considerably in both developed and less developed countries, the MFN applied tariffs fixed under the WTO remains the benchmark for further duty reduction under the RTAs. The following subsections

[2] According to the World Trade Organisation (WTO), market access for goods means "the conditions, tariff and non-tariff measures, agreed by members for the entry of specific goods into their markets".

provide detailed discussion on the MFN applied duties of the countries having trade agreements with India.

3.1.1Tariff policies of agriculture under the WTO

The two important tools of WTO in administering the tariff policy are (i) bound rates, and (ii) MFN duty. The bound tariff is the ceiling rate of duty for a given commodity line and the MFN tariffs are what countries promise to impose on imports from other members of the WTO. The responsibility of fixing the bound rates and MFN duty is the sole responsibility of the individual countries (Joseph and George, 2002). Though there exist various types of tariffs such as specific tariffs (tariffs computed on the physical quantity of the imported goods), ad valorem tariffs (tariff is calculated as a percentage of the value of the imported goods), mixed tariffs (either a specific or an ad valorem rate), compound tariffs (a combination of specific and ad valorem tariffs), tariff-rate quotas (low tariff rate for within quota quantity and a high rate on above the quota quantity) etc., ad valorem tariff is the general norm under the WTO. However, Jørgensen and Schröder (2005) observed that undue reliance on ad valorem tariffs might have a potential opportunity cost in terms of a lost number of varieties, resulting in lower global consumer utility under the monopolistic competition, and therefore, the selection of the tariff tools should be based on the industry characteristics such as market structure and ease of entry and exit.

According to WTO, tariffs on all agricultural products are now bound and the tariffication process has made markets substantially more predictable for agriculture. The trade liberalisation in agriculture affects countries of different sorts in different manners (Monge-Roffarello et al., 2005). The variations in MFN tariffs of agriculture across countries having trade agreements with India in which either rubber or rubber products are covered are given in Table 3.1. Rep of Korea, India, Sri Lanka, Thailand and Japan are the countries that applied higher MFN duty in the agriculture sector. The share of tariff lines which can be classified as international tariff peaks[3] are higher for India (81.5 per cent), Sri Lanka (69.1 per cent), Thailand (59.0 per cent), Bangladesh (57.7 per cent), Rep. of Korea (53.1 per cent) and Japan (48.1 per cent). Though, generally, countries that produces industrial products are advocates of free trade and agriculturalists are the proponents of protectionism, countries such as Rep.

[3] Tariffs over 15 per cent is considered as international tariff peak

Table 3.1. Average Tariffs of Countries having Trade Agreements with India (2017)

Countries involved	Agriculture			Total		
	MFN Applied (per cent)	Share of HS 6 digit subheadings (per cent)		MFN Applied (per cent)	Share of HS 6 digit subheadings (per cent)	
		Bound (Duties>15 per cent)	MFN Applied (Duties> 15 per cent)		Bound (Duties>15 per cent)	MFN Applied (Duties>15 per cent)
Argentina	10.3	95.2	15.3	13.7	97.8	36.4
Brazil	10.2	95.7	14.7	13.4	96.4	35.3
Uruguay	9.9	96.2	14.4	10.3	98.2	33.1
Paraguay	10.0	93.3	13.9	9.8	94.9	27.3
Chile	6.0	100.0	0	6.0	100.0	0.0
Bhutan	NA	NA	NA	NA	NA	NA
Bangladesh (2016)	16.9	98.2	57.7	13.9	15.9	41.6
China	15.6	35.5	35.2	9.8	16.3	15.1
Rep. Korea	56.9	75.5	53.1	13.7	20.2	10.7
Sri Lanka	26.9	99.6	69.1	9.3	27.6	19.9
Lao PDR	11.2	40.2	21.1	8.5	56.4	9.2
Japan	17.7	57.3	48.1	4.0	3.7	3.4
Singapore	0.1	3.4	0.2	0.0	0.5	0.0
Malaysia	8.1	26.5	8.5	5.7	36.6	13.3
Nepal (2016)	14.1	95.5	12.7	12.1	87.6	14.2
Brunei	0.0	96.8	0.0	0.2	95.3	0.0
Indonesia	8.7	99.4	9.6	8.1	90.6	9.8
Thailand	25.1	91.4	59.0	9.5	66.3	21.1
Philippines	9.9	90.5	13.3	6.3	56.0	3.2
Cambodia	15.1	71.6	25.7	11.1	45.7	9.7
Myanmar	9.5	83.3	7.4	6.5	15.1	5.7
Vietnam	16.4	47.7	41.7	9.6	27.7	24.7
Maldives	10.8	99.9	23.3	13.0	95.0	30.4
Pakistan (2016)	13.4	93.4	47.0	12.1	95.1	44.1
India	32.8	98.4	81.5	13.8	71.5	19.4

Source: (WTO, 2018) NA: Not available

of Korea and Japan, which are major manufactures of industrial products, are charging higher import duty for the majority of the tariff lines under the agriculture sector.

However, though the Agreement on Agriculture (AoA) under the WTO included many non-food items such as raw cotton, wool, raw silk, etc., and almost all plantation crops, it excluded NR from the product coverage of AoA. Hence NR is classified as 'other products' and the rules applied for 'other products' are technically become applicable to NR also.

3.1.2 Tariff policies of non-agriculture under the WTO

Though the external trade policies of the countries are varied in nature, most large countries, which are export-oriented, followed a tariff policy pattern of (a) tariff exemption or low tariff for products which cannot be produced domestically or whose production cannot meet its domestic demand; (b) tariff rates for components of machinery equipment which can be produced domestically or whose quality is sub-standard, are lower than tariffs on final products; and, (c) very high tariffs for manufactured goods whose domestic production requires protection, and (d) generally low tariff rates for raw materials compared to finished or manufactured products (Yunling, 2012). The variations in MFN tariffs of non-agricultural products across countries having trade agreements with India in which either rubber or rubber products are covered are given in Table 3.2. In the non-agricultural products, MFN duty is the highest for Argentina, Brazil, Bangladesh, Maldives and Pakistan. Among the countries, only Argentina, Brazil, Uruguay and Maldives have higher MFN duty for non-agricultural products compared to agricultural products. In the non-agricultural sector, the share of tariff subheadings under the category of international tariff peaks are higher in Pakistan (43.6 per cent), Argentina (39.9 per cent), Bangladesh (38.9 per cent), Brazil (38.6 per cent) and Uruguay (36.1 per cent).

Table 3.2 Average Tariffs of Non-Agricultural Products of Countries having Trade Agreements with India (2017)

Countries involved	Non-Agricultural products			Total		
	MFN Applied (per cent)	Share of HS 6 digit subheadings (per cent)		MFN Applied (per cent)	Share of HS 6 digit subheadings (per cent)	
		Bound (Duties>15 per cent)	MFN Applied (Duties>15 per cent)		Bound (Duties>15 per cent)	MFN Applied (Duties>15 per cent)
Argentina	14.3	98.2	39.9	13.7	97.8	36.4
Brazil	13.9	96.5	38.6	13.4	96.4	35.3

Uruguay	10.4	98.5	36.1	10.3	98.2	33.1
Paraguay	9.7	95.2	29.4	9.8	94.9	27.3
Chile	6.0	100.0	0	6.0	100.0	0.0
Bhutan	NA	NA	NA	NA	NA	NA
Bangladesh (2016)	13.4	3.4	38.9	13.9	15.9	41.6
China	8.8	13.3	11.9	9.8	16.3	15.1
Rep. Korea	6.8	11.9	3.9	13.7	20.2	10.7
Sri Lanka	6.3	15.7	11.7	9.3	27.6	19.9
Lao PDR	8.1	59.1	7.2	8.5	56.4	9.2
Japan	2.5	0.7	0.7	4.0	3.7	3.4
Singapore	0	0	0	0.0	0.5	0.0
Malaysia	5.3	38.2	14.0	5.7	36.6	13.3
Nepal (2016)	11.7	86.3	14.5	12.1	87.6	14.2
Brunei	0.3	95.1	0.0	0.2	95.3	0.0
Indonesia	8.0	89.3	9.8	8.1	90.6	9.8
Thailand	7.2	62.5	14.9	9.5	66.3	21.1
Philippines	5.7	50.8	1.5	6.3	56.0	3.2
Cambodia	10.5	41.4	7.2	11.1	45.7	9.7
Myanmar	6.0	3.7	5.4	6.5	15.1	5.7
Vietnam	8.4	24.6	21.9	9.6	27.7	24.7
Maldives	13.3	94.2	31.6	13.0	95.0	30.4
Pakistan (2016)	11.9	95.4	43.6	12.1	95.1	44.1
India	10.7	67.5	9.4	13.8	71.5	19.4

Source: WTO, 2018 NA: Not available

3.2Tariff policies of India

The history of tariff policy of India can be traced back to the ancient history during the period of Kautilya (Asakura, 2003). Under the British, though they proclaimed free trade, the policies were formulated mainly for protecting the domestic manufacturer's interest in Briton than the protection of the domestic economy of India (Rider, 1970). After the Mutiny in 1857-1859, the general rate of duty was raised from 5 to 10 per cent, while the duties on cotton yarn were raised from 3.5 to 5 per cent (Adarkar, 1944). Till 1923 the Government of India followed free-trade and thereafter, the policy of discriminating protection was adopted by a resolution of the Legislative

Assembly in 1923, which also recommended the creation of a Tariff Board (Adarkar, 1944). The system of Tariff Board continued till 1939 and during the period of protection, a large number of domestic industries emerged in the country. In 1940 the condition of protection liberalised and assured post-war protection to industries useful to the war effort (Adarkar, 1944).

The protectionist tariff policies followed by India after the independence was in line with the successful implementation of protectionist tariff policies for advances in industrialisation in countries such as the USA, Germany, Japan, etc. (Sharma, 1981). A major shift in this protectionist trade policies occurred in 1991 due to the balance of payment problems of the country. The major trade policy shifts during 1991 were: removal of quantitative restrictions (QRs), reduction in import tariffs, removal of canalised imports and exports through State Trading Corporations (STCs), rationalisation of exchange rate policy, establishment of trading house, etc. (Rais, 2012). Accordingly, the focus of the trade policy of India is changed from import substitution to export promotion. However, the pace of India's export growth has not been distinctly high during the larger part of the post-reform period between 1993 and 2005 (Veeramani, 2007).

3.2.1 Tariff policies of India under the WTO

Under the WTO regime, the norm adopted by India for fixing the ceiling (bound) rates for agricultural products were 100 per cent for primary products, 150 per cent for processed products, and 300 per cent for edible oils. In the case of other products, the general norm adopted by the government of India was to keep the bound rate at 40 per cent, if the base rate of duty (import duty as on January 1, 1990) was at or above 40 per cent, and 25 per cent, if the base rate of duty was below 40 per cent (Joseph and George, 2002). While India had bound 2630 tariff lines at HS six-digit level covering mostly raw materials, components and capital goods the country did not offer binding commitments for petroleum/petroleum goods, fertilisers, consumer goods and certain non-ferrous metals and minerals (Joseph and George, 2002). However, the major policy shift in the external trade front of India after Independence was the economic liberalisation of the country in the early 1990s and is followed by tariff liberalisation, removal of QRs, etc.

3.2.2 Tariff policies on rubber and rubber products of India under the WTO

While the focus on self-sufficiency in NR production with its protective trade policy appendages had been the hallmarks of the pre-liberalization phase, the policy imperatives underlining value-added exports with competitiveness in cost and quality have been the priorities in the liberalized trade policy regime (George et al, 2002; Joseph and George, 2013).

The major policy shifts in the external trade of NR during the pre (1947-91) and post (1992 onwards) liberalisation phases were: (i) direct imports of NR by the rubber products manufacturers based on the import quota prescribed by the Government of India (GOI) from 1947 to the early 1970s; (ii) canalized imports of NR through State Trading Cooperation of India (STC) from the early 1970s to the early 1990s; (iii) direct imports of NR by the manufacturers through the duty free channels (duty remission and exemption schemes) from the early 1990s to 2001; (iv) restricted NR imports through the designated ports of Kolkata and Visakhapatanam from December 2001 to August 2004 consequent to the removal of the quantitative restrictions (QRs) on 31 March, 2001; (v) shifts in tariff policy characterized by introduction of tariff rate quota (TRQ) and optional non-ad valorem duty since 2010 (Joseph and George, 2013a) (vi) revision of the import duty into 25 per cent or Rs 30/kg whichever is lower since May 2015[4] (vii) restricted NR imports through the designated ports of Chennai and Nhava Sheva (JNPT) since January 2016[5], and (viii) removal of the port-restriction for imports of NR under Advance Authorisation Scheme since June 2018[6].

The tariff policies of rubber and rubber products of India can be broadly classified as tariff policy for (i) rubber raw materials, and (ii) finished rubber products. In the case of rubber raw materials while NR is a plantation crop having the characteristics of agricultural produce the other two, namely SR and RR, are factory outputs. While the focus of tariff policy of NR is the protection of domestic production sector and more than one million small rubber farmers of the country the tariff policies of SR and RR considered the requirement of manufacturing industries and domestic production of the same. However, for fixing the bound tariffs, for different forms of NR, even the general norm of fixing the bound rates for other products of the country is not followed. The general norm was to fix the bound rate at 40 per cent for those

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[4] Notification no. 28/2015-Customs dated 30th April, 2015, New Delhi
[5] Notification no. 32/2015-2020- DGFT dated 20 January, 2016, New Delhi
[6] Notification no. 11/2015-2020- DGFT dated 12 June 2018, New Delhi

products for which the base duty (basic duty plus other duties and charges as of January 1, 1990) was at or above 40 per cent (Joseph and George, 2002). Even though the base duty for all kinds of dry rubber was in the range of 85-145 per cent, the country fixed the bound rate of all dry forms of NR at 25 per cent.

The tariff policy of India, since the early 1990s indicated that except for the dry forms of NR the MFN duty of major plantation crops varied between 70 -100 per cent (George and Joseph, 2005). After the establishment of the WTO in 1995, during the year 1996, the average MFN duty of the rubber raw materials was the lowest among all the segments of the Indian rubber industry. Subsequent decades showed considerable reduction in average MFN duty in all segments of the industry and the largest reduction is observed in the case of value-added rubber products, especially in the tyre sector. The MFN duty of rubber raw materials of India came down from 46.0 per cent in 1996 to 15.3 per cent in 2018. The MFN duty of products in the tyre sector reduced from 47.3 per cent in 1996 to 9.8 per cent in 2018 and that of non-tyre and intermediate product segments came down from 52 per cent to 10.2 per cent in 2018. Overall, the MFN duty of rubber and rubber products came down from 49.7 per cent in 1996 to 11.3 per cent in 2018. Table 3.3 gives the sector wise simple average tariffs of rubber and rubber products over different years.

Table 3.3 Average MFN Tariffs of Different Segments of Rubber Industry (per cent)

Sector/Year	1996	2005	2015	2018
Raw materials	46.0	19.3	15.0	15.3
Intermediate rubber products	52.0	15.0	10.0	10.0
Tyres and allied products	47.3	14.1	9.5	9.8
Non-tyre rubber products	52.0	15.0	10.0	10.2
Total rubber and rubber products	49.7	15.9	10.6	11.3

Source: (i) WTO-IDB collected from wits.worldbank.com (ii) Notification no. 28/2015 customs dated 30/04/2015

In 1996, only one product was in the duty range of zero to 5 per cent category and all other tariff lines of rubber and rubber products were in the category of tariff lines in the international peaks. Conversely, in 2018, among the 169 tariff lines at the six-digit level, 156 tariff lines are in the category of tariffs 5 per cent to 10 per cent

range, two tariff lines are in the category of domestic peaks and ten are in the category of international peaks. The two tariff lines included in the category of domestic peaks[7] and the nine tariff lines classified in the category of international peaks are the tariff lines of NR. From the category of value-added rubber products tariff line under HS 401695 (-- -- Other inflatable articles) was in the list of tariff peaks (international peaks) during the year 2018.

3.3 Regional trade agreements and the tariff policies

Though the multitude of RTAs and the resultant 'spaghetti bowl effect[8]' might have a negative effect on the trade flows due to intertwined trade rules existing in different trade agreements (Bhagwati, 1995; WTO, 2018b) the rise of preferential tariffs under the RTAs has not blocked the path to overall global tariff cutting (Baldwin, 2016). Econometric analysis shows that trade diversion due to RTAs is also not a prime concern in the world economy (Estevadeordal et al., 2008; Acharya, et al., 2011). As of 1 June 2020, there are 303 RTAs in force (WTO, 2020). These are almost evenly split into RTAs covering goods only, and those that cover both goods and services (WTO, 2018a). The proliferation of RTAs makes it in the centre of policy debates since 2000 (Crawford and Fiorentino, 2005; Fiorentino et al, 2006; Freund and Ornelas, 2010) and the transformation from shallow to deep trade agreements covering more policy areas are gaining momentum (Osnago et al., 2015; Constantinescu et al., 2018). RTAs provide more than the traditional gains from trade, ie., it offers benefits including credibility, bargaining power, insurance, coordination, etc. (Fernández and Portes, 1998). Though the multilateralism (ie.,GATT/WTO) do not considerably encourage the trade between the nations the regionalism significantly influenced the trade and increases the welfare of the countries (Rose, 2004; Koo et al., 2006).

3.3.1 Tariff policies of rubber and rubber products of India under the RTAs

During the post-WTO regime, though an unprecedented surge in the number of RTAs was observed, India was a late entrant into the bandwagon. Though India was a member of APTA (rechristened Bangkok Agreement) since 31st July 1975, which was the first trade agreement of India after the independence, till the end of the twentieth

[7] Import tariffs over three times of the national average tariff is considered as domestic peak
[8] The spaghetti bowl effect describes that increasing number of RTAs between countries slows down trade between them

century, the country was a strong proponent of multilateralism. The original signatories of the Bangkok agreement were Bangladesh; India; Korea; Lao People's Democratic Republic and Sri Lanka. Thereafter, the country's engagement in RTAs got momentum only at the beginning of the 21st century, and most of the major agreements are signed in the first decade of the 21st century. Appendix L provides the list of trade agreements of India covering rubber or rubber products, listed in the Ministry of Commerce and Industry, Government of India and notified in the WTO.

An analysis of the policy documents prepared for the Ministry of commerce and industry, Government of India by the Rubber Board is an indication of the extent of protection offered to NR (George et al, 2005a; 2005b) and the role of a designated authority in protecting the interests of the sector. Except in the case of APTA, agreements with Nepal and Bhutan, and concessions given for less developed countries of SAFTA, all forms of NR are excluded from the purview of tariff liberalisation. Of these, the first one is signed much before the establishment of WTO. However, most of India's trade agreements covering rubber or rubber products aimed to liberalise the domestic market of rubber and rubber products either by reducing or eliminating the import duty by keeping a list of items excluded from any kind of tariff reduction or elimination. Table 3.4 gives the RTA-wise tariff policies of India where rubber or rubber products are included.

Table 3.4. RTA-wise Tariff Policies of Rubber and Rubber Products

Sl No.	Agreements and Year of Entry	Date of entry	Tariff Policy
1	Asia Pacific Trade Agreement (APTA)	17-06-1976	Duty reduction for selected rubber and rubber products
2	India Sri Lanka FTA	01-03-2000	Duty elimination for selected tariff-lines
3	CECA between The Republic of India and the Republic of Singapore	01-08-2005	Duty reduction and elimination for selected tariff lines
4	Agreement on South Asia Free Trade Area (SAFTA)	01-01-2006	Duty reduction and elimination for selected tariff lines
5	India Bhutan Trade Agreement	29-07-2006	No duty for imports
6	India-Chile PTA	17-08-2007	Duty reduction for selected tariff lines
7	India MERCOSUR PTA	01-06-2009	Duty reduction for selected tariff-lines
8	India Nepal Trade Treaty	27-10-2009	No duty for imports

9	India Korea CEPA	01-01-2010	Duty reduction and elimination for selected tariff lines
10	ASEAN India Free Trade Area (AIFTA)	01-01-2010	Duty reduction and elimination for selected tariff lines
11	CECA between India and Malaysia	01-07-2011	Duty reduction and elimination for selected tariff lines
12	India Japan CEPA	01-08-2011	Duty reduction and elimination for selected tariff lines

Source: GoI, 2020

Among the twelve trade agreements, the APTA, the agreement between India and MERCOSUR, and India and Chile are preferential trade agreements. India-Sri Lanka, SAFTA, ASEAN-India are free trade agreements. India has CECA with Singapore and Malaysia, and CEPA with Korea and Japan, and, bilateral trade treaties with Nepal and Bhutan. While the trade agreements of India with Nepal and Bhutan exempted import tariffs of the goods originated from both the countries, under other trade agreements, coverage of the products and import tariffs are varied depending on the nature of the agreement.

3.3.1.1Tariff policies of rubber and rubber products under the PTAs of India

The APTA, established in 1975 is Asia's first multi-member preferential trade agreement (PTA) between developing countries. Bangladesh, India, the Lao People's Democratic, the Republic of Korea and Sri Lanka are the five countries that originally ratified the Agreement (Iyer, 2003). Later in 2001, China joined the Agreement and it became the sole agreement in which both the world's biggest populated countries such as India and China are participating. The agreement covers twenty tariff lines at the six-digit level and four tariff lines at the four-digit level of the chapter 40 of HS (Appendix C). Seven tariff lines at the six-digit level are belongs to the raw material category, of which four are tariff lines of NR and the rest are tariff lines of SR. No tariff lines from the intermediate product category are covered under the trade agreement. Out of the seventeen tariff lines included in the value-added product category three belongs to tyre sector (two are at the tariff heading level, viz., HS 4011 (except HS 401110) and HS 4013) and the rest are tariff lines of non-tyres. The margin of preference (MOP) for tariff lines under the raw material segment ranges from 15 per cent to 43 per cent. While the MOP for products under the tyre sector ranges from 14 per cent to 40 per cent the MOP for non-tyre products ranges from 15-30 per cent. Under India-MERCOSUR PTA

India has given an MOP of 20 per cent for tariff line HS 40082100 (GoI, 2020). Conversely, under India-Chile PTA tariff concessions was given to ten tariff lines and the extent of tariff concession offered is 80 per cent (Appendix G).

3.3.1.2 Tariff policies of rubber and rubber products under the FTAs of India

Under India-Sri Lanka FTA, except the 32 tariff lines kept in the negative list, all other tariff lines are earmarked for tariff concession/elimination (Appendix D). All the five forms of NR at the six-digit level of HS and RR (HS 4003.00) are included in the negative list. Twelve tariff lines of intermediate rubber products, six tariff lines of tyres and allied products (retreaded/used pneumatic tyres) and eight tariff lines of non-tyre rubber products are included in the negative list of India under the ISLFTA. Under the SAFTA, all items except those mentioned in Appendix F2 are exempted from the whole of the duty of customs leviable when imported from LDCs of SAFTA. For all other countries the import duty is exempted except for the products listed in Appendix F1.

All the tariff lines are listed under six categories– Normal Track-1 (NT-1), Normal Track-2 (NT-2), Sensitive Track (ST), Special Products (SP), Highly Sensitive List (HSL), and Exclusion List (EL) in AIFTA. India's tariff commitments are given at the eight-digit level of the HS and out of the 174 tariff lines of rubber and rubber products more than 52 per cent tariff lines are categorised for tariff elimination (NT-1 and NT-2), 40.23 per cent for tariff reduction (ST), and 6.89 per cent are excluded from tariff reduction (George, 2010; George and Joseph, 2014). Twelve tariff lines of rubber and rubber products at the eight-digit level of the HS are included in the exclusion list of India (Appendix I), of these nine belongs to raw materials (NR) and the rest are intermediate products.

3.3.1.3 Tariff policies of rubber and rubber products under the CEPAs and CECAs of India

Under the CEPAs and CECAs as in the case of other FTAs, India kept its sensitive items in the list of items excluded from any kind of tariff concession. In the case of CECA between India and Singapore, products are classified into four groups, viz., (i) list of products for early harvest programme (products in the list allowed for duty-free import into India from Singapore from August 2005 onwards) (ii) list of products for phased elimination in duty (products in the list can be imported from Singapore without duty from April 2009 onwards) (iii) list of products for phased

reduction in duty (the products in the list can be imported into India with reduced duty rates from Singapore in five stages beginning 1st August 2005) (iv) list of products excluded from any concession in duty (no concession is offered for the products in the list) (GoI, 2005). The list of items excluded from tariff concession under India-Singapore CECA is given in Appendix E. Under the CECA between India and Malaysia, the duty concession offered for the rubber and rubber products are given in Appendix J. The duty rates included in the list of items for tariff concessions are ranges from 0-5 per cent.

The tariff policy of rubber and rubber products under the CEPA of India and Korea permitted imports with reduced duty rates and at zero duty rates. The implementation period of the agreement is already over. Therefore, except for the items mentioned in Appendix H and two product lines earmarked as RED and SEN, can be imported into India at zero rate of import duty from Korea. The product classified as RED (HS 4009.42) and SEN (HS 4011.30) can be imported into India with reduced duty rates (GoI, 2010). The products listed in Appendix K are excluded from any kind of tariff concession under the CEPA between India and Japan. All other products, except HS 4002.70, originated in Japan are classified for tariff elimination in 11 equal annual instalments on the date of entry into force of the agreement from the base rate of duty (GoI, 2011).

3.4 Summary

The analysis of the tariff policies of India on rubber and rubber products shows that (i) since NR is not included in the product coverage of Agreement on Agriculture (AoA) of WTO, NR is not considered as an agricultural product (Joseph and George, 2002) (ii) In India, for the fixation of bound rates of rubber and rubber products (in WTO), the norms adopted for fixing bound rates for both agricultural and non-agricultural products are violated (Joseph and George, 2002) (iii) over the years, under the WTO, the average MFN tariffs of rubber and rubber products of India declined considerably (iv) Rubber Board, being the designated authority to protect the interest of the rubber farmers of the country was successful in keeping major tariff lines outside the purview of major RTAs (v) the extent of tariff liberalisation was higher for the value added rubber products of India due to the higher level of tariffs in India compared to other member countries of RTAs of India, and (vi) depending on the type of the agreement and member countries involved, duty concession offered and coverage of

rubber and rubber products are varied. Very often, the reduction or elimination of import duty of a particular product of a country is reflected in its growth in imports. Therefore, to understand the effect of tariff liberalisation under the RTAs on imports at the disaggregated level, the following chapters analyses product-wise impacts of tariff reduction under the RTAs on the growth in import of rubber and rubber products of India.

CHAPTER 4
RUBBER RAW MATERIALS

This chapter is an attempt to understand the impact of tariff liberalisation under the RTAs on rubber raw material import of India at the disaggregate level. In this chapter, all the tariff lines (at the six-digit level of HS) of major rubber raw materials such as Natural Rubber (NR), Synthetic Rubber (SR) and Reclaimed Rubber (RR) covered under the tariff headings HS 4001, HS 4002 and HS 4003 respectively are analysed.

In the rubber industry value chain, the raw material sector is the weakest section. While in the production of NR more than one million small and marginal rubber farmers (average size of holding of rubber farmers is 0.5 ha) are engaged the SR and RR are factory outputs. The country was almost self-sufficient in NR till the early 21st century. Various factors such as fluctuation in NR price, low level of investment in R&D, higher domestic consumption of NR, etc tilt India's position to a net importer of NR. The country is in the process of investing largely in enhancing its SR production capacity. However, the share of imported rubber raw materials in the domestic consumption is increasing. In this context, the present chapter analyses the trends in external trade in rubber raw materials, its tariff policies, structural changes in imports of rubber and the effect of tariff liberalisation under the RTAs on the growth in import of rubber raw materials of India.

4.1 External trade of rubber raw materials

Available empirical studies on RTAs of India shows that trade agreements negatively affected the balance of trade of the country, lead to revenue losses to the country, favours the big players in the group, adversely affected the domestic agricultural production, increases the imports of plantation commodities, etc. (Ahmed, 2010; Harilal, 2010; Nag and Sikdar, 2011; Veeramani and Saini, 2011). Studies on the external trade of rubber raw materials of India also indicate that the import of rubber raw materials from the member countries of its RTAs is growing at a higher rate than its exports to the member countries of its RTAs (Joseph and George, 2016; 2016a). However, these studies did not attempt any empirical analysis on the effect of tariff policies under the RTAs or the role of reduction/elimination of tariffs in determining the growth in import of rubber raw materials from the RTA countries. Therefore, the present section, is followed by a detailed analysis of the effect of tariff liberalisation

under the RTAs of India on different types of rubbers. For the analytical purpose, the trade data of tariff headings HS 40.01, HS 40.02 and HS 40.03 of chapter 40 (rubber and article thereof) of the WCOs HS nomenclature are considered. The heading HS 40.01 (NR and its different forms) contains five subheadings (tariff lines) at the six-digit level. Under the heading HS 40.02 (SR and its various forms), fourteen sub-headings are listed and the heading HS 40.03 (RR) contains only one tariff line. The trade data of UN comtrade provided by the WITS, DGCI&S, Kolkata and various government notifications are used for the study (detailed discussion on product classifications, data sources are given in Chapter 1). The analysis is done for the period 1988-2017.

4.1.1. Trends in export of rubber raw material from India

In the total merchandise trade of rubber raw materials of India, SR is the major item of trade (60.36 per cent) followed by NR (36.51 per cent) and RR (3.14 per cent) during the period of analysis. The higher share of SR is characterised by low level of domestic production capacity of SR in India compared to the domestic production of NR and also an indicator of growing shift towards SR in the consumption composition of the manufacturing sector (George, 2015). During the period of analysis the rate of growth in export (25.5 per cent), import (14.1 per cent) and total merchandise trade (14.5 per cent) in rubber raw materials with the partner countries of RTAs was higher than the corresponding rate of growth in trade with other countries (18.55 per cent, 12.23 per cent and 12.75 per cent respectively). Though the rate of growth in export of rubber raw materials of India to the RTA partner countries and to the rest of the world was higher than the imports, the share of export in total merchandise trade of India with RTA partner countries and with other countries was only around 8.98 per cent and 12.65 per cent respectively.

The trends in export of NR of India exhibited comparative disadvantage during the period 1996 to 2016 (Joseph and Hari, 2019) and the export of India was highly oriented towards the ASEAN region (Joseph and Hari, 2019a). Though India is not a major producer of synthetic rubber (SR) it is the world's fifth biggest consumer of SR and consumed around 6.0 lakh tonnes during the year 2016-17 (Joseph and Hari, 2019; Rubber Board, 2017). SR (HS 4002) also showed comparative disadvantage in exports throughout the period of 21 years ending 2016 (Joseph and Hari, 2019). India has a sound production base of items under HS 40.03 (RR). This is evident from the share of export of the reclaimed rubber (99.5 per cent) in the total merchandise trade in RR.

According to Joseph and Hari (2019) only in the case of reclaimed rubber in primary forms or in plates, sheets or strip (HS 4003), export exhibited comparative advantage in the world market. The trends indicated improvement in the share of export of RR in total raw materials exports of India as well as the competitiveness in the export of RR in the world market. The export of RR also exhibited regional orientation towards the ASEAN region since 2014 (Joseph and Hari, 2019a). However, the share of RR in total merchandise trade of raw materials is only around 3per cent of India. The recent trends indicated that Iran, Thailand and China are the top importers of India's NR, SR and RR respectively (Table 4.1) during the year 2018-19. The concentration ratio (CR 4) of export of NR, SR and RR during the year 2018-19 was 0.85, 0.59 and 0.61 respectively.

Table 4.1. Top Four Destinations of Raw Material Exports from India (2018-19).

HS 4001		HS 4002		HS 4003	
Country	Share (per cent)	Country	Share (per cent)	Country	Share (per cent)
Iran	60.13	Thailand	26.94	China P Rp	33.08
Malaysia	13.53	Pakistan	13.03	U S A	12.15
Indonesia	6.63	China P Rp	9.86	Sri Lanka DSR	8.62
Nepal	5.00	Turkey	8.83	Thailand	6.66
Total	85.29	Total	58.66	Total	60.51

Note: HS 4001= All forms of NR, HS4002= All forms of SR, HS 4003 = RR
Source: Estimated using the trade data available from Export Import Databank, Department of Commerce, Government of India

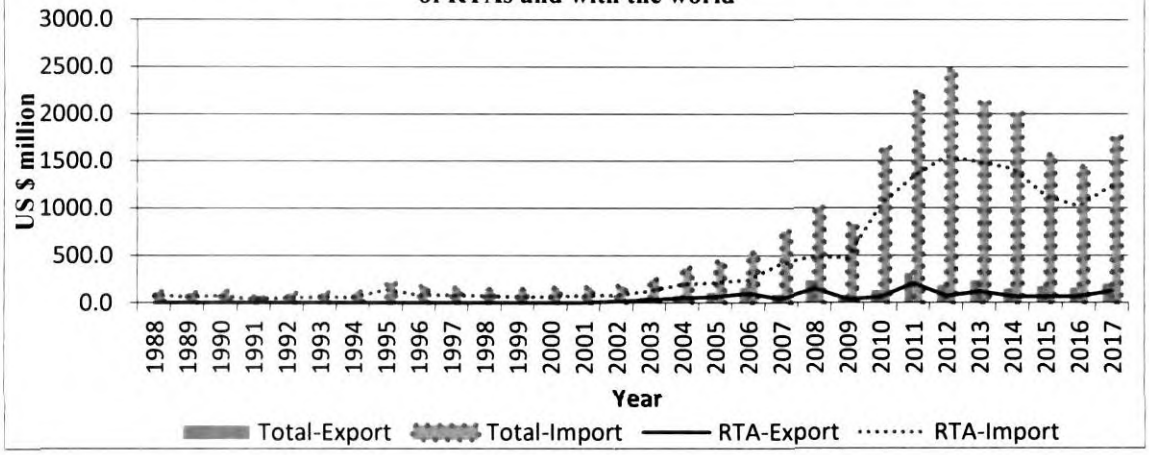
4.1.2. Trends in imports of rubber raw materials

In the total import of raw materials of rubber, the major category of import was SR followed by NR and RR. Among the rubber raw materials, India has a well-established NR production system and had near self-sufficiency till 2006-07. Thereafter, the country showed increase in import of NR due to various domestic and international factors such as supply-side rigidities, comparative price advantage and duty-free import schemes (Joseph and George, 2013; 2013a; Joseph and Jacob, 2018). This has resulted in a higher compound rate of growth in import of NR compared to SR during the period of analysis (1988-2017). While the total rubber raw material import of India during the study period showed a rate of growth of 13.36 per cent the growth in import from RTA partner countries was 14.1 per cent. The import from RTA member countries was dominated by NR (95.36 per cent) followed by SR and RR. In the case

of NR, India depended more on its RTA partners and in the case of SR, the major sources of import are non-RTA partners of the country.

During the year 2017, the value of import of SR, NR and RR from the RTA member countries was US $ 516.33 million, US $ 722.39 million and US $ 0.13 million respectively and the value of import from the rest of the world was US $487.19 million, US $ 322.29 million and US $0.24 million respectively. It shows for both NR and SR the major sources of imports are RTA partner countries. This indicated the changing composition of sources of imports of rubber raw materials, especially the sources of import of SR. However, the higher share of import in total merchandise trade with the RTA member countries (91.02 per cent) and with other countries (87.35 per cent) during the period of analysis indicated the extent of India's import dependency on rubber raw materials, especially the import dependency of India on its RTA partners on raw materials[9]. Figure 4.1 shows the trends in export and import of rubber raw materials of India with its RTA partners and with the world.

Fig 4.1. India's External Trade in Raw materials of rubber with the partners of RTAs and with the world



4.1.3 Raw materials of rubber and the balance of trade of India

The share of import of raw material of rubber in the total merchandise trade in rubber raw materials is increasing at a higher pace. The growing import dependence of the country on the raw materials is resulted in widening the negative balance of trade in the rubber raw material sector. The movement of the balance of trade of rubber raw

[9] During the year 2017, the value of import of rubber raw materials of India from the member countries of RTAs were US $1238.85 million and the import from other countries were US $519.65 million

materials of India with its RTA partners, world and other countries can be seen in figure 4.2.

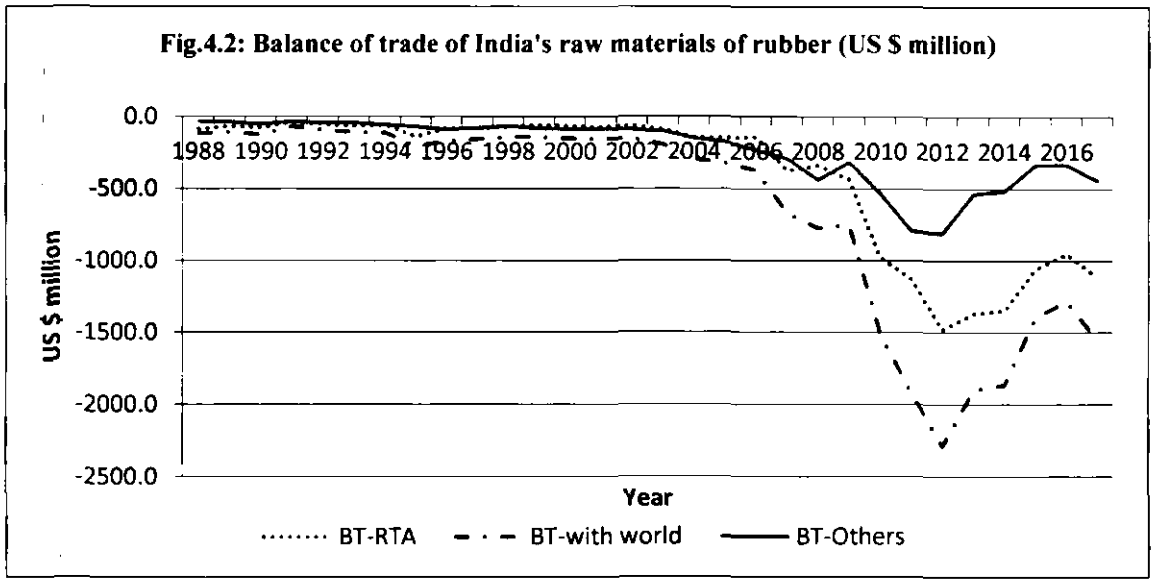


Figure 4.2 shows a drastic increase in the negative balance of trade in rubber raw materials with the RTA countries during the period of analysis. The plausible reasons for the growth in trade deficit are (i) higher growth in domestic rubber consumption (ii) declining NR production in the country and the growing dependence of import of NR from the beginning of the 21st century, (iii) the historical import dependence on SR, and (iv) negligible value of export of rubber raw materials from the country (the share of export is only around ten per cent of the total raw material trade). However, the higher trade deficit in rubber raw materials with the partners of RTAs has a crucial role in determining India's negative balance of trade in total rubber and rubber products with the RTAs (Joseph and George, 2016) and with the world.

4.2 Tariff policy, structural breaks and the growth in import of rubber raw materials

None of India's RTAs, except the trade agreements with Bhutan, Nepal, SAFTA (for less developed countries (LDCs) including Bangladesh) and APTA, are permitted to import NR into the country with reduced or zero rates of duty. In the case of import of SR, none of the PTAs of India permitted a reduction in import duty. However, different forms of SR can be imported with reduced/zero duty rates into India from the

partner countries of other kinds of trade agreements such as FTAs and bilateral trade agreements. Conversely, RR has given more protection under the trade agreements of India compared to the protection offered to SR. However, the RTA-wise import growth of rubber raw materials of India during pre and post phases of signing of the trade agreements exhibited mixed trends (Table 4.2). The salient features of the changing growth in import of rubber raw materials are (i) though the majority of the NR (HS 4001) imports are from ASEAN nations, the rate of growth of imports becomes decelerated after the signing of AIFTA (ii) the growth in imports of NR from Sri Lanka and APTA increased considerably, and (iii) while there are marked increase in the growth in import of SR from Singapore and Malaysia during the post RTA phase, the import from APTA increased slightly.

Table 4.2 Rate of Growth (Per Cent) of Import of Rubber Raw Materials of India during Pre and Post-RTA

Sl No.	Trade Agreement	4001		4002		4003	
		Pre-RTA	Post-RTA	Pre-RTA	Post-RTA	Pre-RTA	Post-RTA
1	Asia Pacific Trade Agreement*	0.01	19.29	17.77	19.57	---	25.71
2	India-Sri Lanka	9.70	13.86	-28.68	-11.25	---	17.65
3	India-Singapore	-6.36	-8.15	5.54	37.91	---	---
4	SAFTA	-1.83	-7.60	-11.83	0.94	---	22.61
5	India-Bhutan	---	---	---	---	---	---
6	Chile-India	---	---	---	---	---	---
7	MERCOSUR	-12.39	---	58.10	-10.75	---	---
8	India-Nepal	28.78	---	---	---	---	---
9	India-Korea	0.25	-68.58	21.30	-4.65	218.30	19.10
10	ASEAN India	9.65	1.79	19.79	4.74	34.87	-34.13
11	India-Malaysia	1.17	-13.95	2.41	12.17	25.25	-81.89
12	India-Japan	3.12	-54.32	3.46	-2.68	-5.80	4.88

Source: Estimated using the trade data provided in wits.worldbank.org

*In November 2001 China joined APTA, so the period 1988-2001 is considered as pre RTA phase and the period 2002-2017 is considered as post –RTA phase

The changes in imports may not be due to the changes in tariff policies alone. There may be other factors or events associated with the pattern of imports. In order to understand major phases of imports during the period of analysis, structural break years are identified using breakpoint analysis. The break-periods and corresponding growth rates during different phases are given in Table 4.3. The shifts in import of NR are observed during the years 1994, 2000 and 2011, which was almost coincided with the

movement of NR price and not associated with signing of any RTAs. In the case of SR, the structural changes in imports are observed during the years 1992, 2000 and 2010 and the year of entry of ISLFTA was 2000. The break years for the import of RR were during the years 1995, 2006 and 2012. Among the two major forms of rubber raw materials, NR (16.25 per cent) exhibited a higher rate of growth in imports than SR (12.90 per cent) during the period of analysis. Though India is the sixth major producer and the second major consumer of NR in the world (Rubber Board, 2020), the country is also a major importer of NR in the world. The share of import was around 95 per cent of the total trade in NR during the year 2017.

Table 4.3 Growth Rates (per cent) up to the Break Years of NR, SR, RR and Total Raw Material Imports from RTA Member Countries

NR		SR		RR		Total	
Year	Growth	Year	Growth	Year	Growth	Year	Growth
1988-94	-26.04	1988-92	9.47	1988-95	61.07	1988-94	-5.61
1995-00	-33.76	1993-00	1.36	1996-06	118.27	1995-99	-16.32
2001-11	43.07	2001-10	23.20	2007-12	85.50	2000-09	28.00
2012-17	-5.95	2011- 17	-7.90	2013-17	-48.16	2010-17	-1.34
Total	16.25	Total	12.90	Total	21.7	Total	14.11

Source: Estimated using the trade data provided in wits.worldbank.org

4.3. Trends in import of natural rubber (HS 4001)

All major forms of NR are classified under the tariff heading HS 4001. Though there are five tariff lines at the six-digit level viz., HS 4001.10, HS 4001.21, HS 4001.22, HS 4001.29 and HS 4001.30, only four are mostly traded. The items under HS 4001.30 are not a major item of trade. The share of this product in the total merchandise trade of HS 40.01 was only 0.02 per cent during the period of analysis. Around 90.84 per cent of the import of NR of India during the last five year periods ending 2018-19 was from Indonesia (47.97 per cent), Thailand (19.67 per cent), Vietnam (17.65per cent) and Malaysia (5.56 per cent). Though all the four countries are members of RTAs of India, duty-free import is not permitted from these countries as NR is in the excluded product category under major trade agreements of India, in which major NR producing countries are members. This indicated that the most crucial component governing tariff policy and the implementation period of a trade agreement is the categorisation of the product (George and Joseph, 2014).

The value of import of NR from RTA partner countries of India grew from US $61.87 million in 1988 to US $722.39 million in 2017. In the total import of NR, more than 95 per cent was from its RTA partners. Conversely, the value of import from other countries increased from US $0.69 million in 1988 to US$32.23 million in 2017. Though the share of other countries in the total import of NR was negligible (1.10 per cent in 1988 and 4.27 per cent in 2017) the rate of growth in import (20.67 per cent) was much higher than the import from RTAs (16.25 per cent). Among the five subheadings of HS 4001, the subheading HS 4001.21 and HS 4001.22 together accounted 94.57 per cent of the total value of import (US $754.62 million) of the country during the year 2017 and the rate of growth of imports of HS 4001.22 (26.95 per cent) during the period of analysis was much higher than the rate of HS 4001.21 (16.70 per cent). Till 2007, the share of HS 4001.21 was higher than that of the import of HS 4001.22. Thereafter a marked shift in the composition of imports is observed. During the year 2017, HS 4001.22 alone had a share of more than 80 per cent of the total import of HS 4001. However, in 2017, 94.69 per cent of HS 4001.22 and 100 per cent of HS 4001.21 are imported from RTA partners of India.

4.3.1. Tariff policies of different forms of NR under the RTAs

The import duty for NR during the year 2019 (as of 01.09.19) was optional among the ad valorem and specific duties. While the rate of duty for NR latex (HS 4001.10) is fixed at 70 per cent the rate of duty for other major forms of NR such as products under HS 4001.21, HS 4001.22 and HS 4001.29 are fixed at 25 per cent or Rs 30/kg, whichever is lower[10]. The import duty for products under HS 4001.30 was 10 per cent (GoI, 2020a). Among the twelve trade agreements, in which rubber or rubber products are covered (Table 4.4), all forms of NR are excluded from giving duty concessions under the trade agreements of India with MERCOSUR, Chile, Singapore and Sri Lanka. Except items under HS 4001.30, all products are excluded from tariff concessions under the country's trade agreements with Japan, Malaysia, ASEAN and Korea. Conversely, APTA provided a margin of preference (MOP) of 43 per cent for HS 4001.10 and 20 per cent for HS 4001.21, HS 4001.22 and HS 4001.29.

[10] Notification No. 28/2015-Customs dated 30 April 2015

Table 4.4. Tariff Concessions Offered by India for Tariff Lines under HS 4001

Name of the RTAs/ HS Code		4001 10	4001 21	4001 22	4001 29	4001 30
	MFN 2018 (per cent)	70.0	25.0	25.0	25.0	10.0
APTA	MOP (per cent)	43.0	20.0	20.0	20.0	EXC
ISLFTA	Tariff	EXC	EXC	EXC	EXC	EXC
Singapore	MOP	E	E	E	E	E
SAFTA	Base rate (MFN 2006)	70.0	20.0	20.0	20.0	12.5
	Tariff (per cent)	0	0	0	0	0
Bhutan	Tariff (per cent)	0	0	0	0	0
Chile	MOP	EXC	EXC	EXC	EXC	EXC
MERCOSUR	MOP	EXC	EXC	EXC	EXC	EXC
Nepal	Tariff (per cent)	0	0	0	0	0
Korea	Base Rate (MFN 2006)	70.0	20.0	20.0	20.0	12.5
	Tariff (per cent)	EXC	EXC	EXC	EXC	0
AIFTA	Base Rate (MFN 2007)	70.0	20.0	20.0	20.0	10.0
	Tariff (per cent)	EXC	EXC	EXC	EXC	0
Malaysia	Tariff (per cent)	EXC	EXC	EXC	EXC	0
Japan	Base Rate (per cent)	70.0	20.0	20.0	20.0	10.0
	Category	NA	NA	NA	NA	B10

Notes: (i) MOP- Margin of Preference, (ii) 4001 10: Natural rubber latex, whether or not pre-vulcanised; 4001 21: Smoked sheets; 4001 22: Technically specified natural rubber (TSNR); 4001 29: Other; 4001 30: Balata, gutta-percha, guayule, chicle and similar natural gums; (iii) EXC and E: Excluded, (iv) NA: Not applicable, (v) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

Only under the trade agreements with Bhutan, Nepal and SAFTA (for less developed countries (LDCs) including Bangladesh), all forms of NR are classified for duty-free imports. Though under SAFTA, duty-free import of NR is allowed from LDCs of the agreement the threat of import of NR is very limited as only Bangladesh is a producer of NR in this category. In effect, to a large extent, India adopted a tariff policy that offered more protection to the domestic NR production sector by including different tariff lines of NR under the protected categories.

4.3.2. Effect of tariff policies of India under the RTAs on natural rubber

Though the import of NR from the RTA partner countries showed structural breaks in 1994, 2000 and 2011 during the period of analysis, the results of the gravity model shows that the tariff concessions offered by India under the RTAs didn't exhibit significant effect on the import of NR (Table 4.5). In contrast to the tariff concessions offered under the RTAs, the growth in GDP of India exhibited significant

Table 4.5. Results of Gravity Model Estimation of Tariff Lines under HS 40.01 (NR) Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Pr>c 2
1.	4001.10"	Coeft	-0.12 (0.28)	0.18 (0.35)	-2.48 (1.97)	-1.05 (0.70)	-1.17* (0.60)	1.64* (0.93)	-1.15 (1.66)	22.72* (14.94)	28.85	0.(02
		Z stat	-0.43	0.53	-1.26	-1.50	-1.95	1.76	-0.69	1.52		
2.	4001.21	Coeft	0.93*** (0.25)	0.33** (0.15)	-3.90*** (0.57)	-0.46 (0.79)	-1.78*** (0.68)	1.78*** (0.58)	-4.26*** (0.72)	5.23 (7.74)	102.24	0.(00
		Z stat	3.77	2.16	-6.78	-0.58	-2.60	3.09	-5.88	0.67		
3.	4001.22"	Coeft	2.32*** (0.36)	-0.13 (0.26)	-1.10 (1.04)	-0.45 (0.91)	-1.16 (1.36)	1.99 (1.51)	-1.78 (1.73)	-46.72*** (10.15)	66.01	0.(00
		Z stat	6.49	-0.50	-1.06	0.49	-0.86	1.32	-4.66	-1.87		
4.	4001.29"	Coeft	-0.22 (0.34)	0.52 (0.35)	-3.95*** (1.43)	-0.44 (0.59)	-1.01 (1.42)	1.78 (1.31)	-4.49*** (1.29)	29.85*** (12.01)	20.73	0.(42
		Z stat	-0.65	1.47	-2.77	-2.83	-0.71	1.35	-3.48	2.48		
5.	4001.30"	Coeft	0.11 (0.28)	-0.56** (0.28)	0.80 (1.21)	-0.28 (0.56)	0.13 (0.31)	0.64 (0.43)	0.90 (0.93)	6.13 (8.49)	451.95	0.(00
		Z stat	0.40	-1.99	0.67	-0.50	0.40	1.51	0.97	0.72		

*** p<0.01, ** p<0.05, * p<0.10, @ RE GLS Regression
Note: (i) The figures within the parentheses are standard errors; (ii) Coeft: Coefficient
Source: Estimated using the trade data from wits.worldbank.org

effect on the growth in import of major items of NR such as products under HS 4001.21 and HS 4001.22. A major portion of the import of NR into the country is coming through the duty paid channels (Joseph and George, 2013a). Though an inverse relationship was found in the case of the distance between the countries and the import growth of all major forms of NR, the relationship was significant (at the level of 1 per cent) only for products under HS 4001.21 and HS 4001.29. In sum, the domestic demand due to the growth in the economy promoted the growth in import of NR into the country, and, the tariff concessions offered under the RTAs did not exhibit significant relationship on imports into India.

4.4. Trends in import of synthetic rubber (HS 4002)

Historically, India has been an SR importing country. During the year 2018-19, the country domestically produced 3.8 lakh MT of SR. The domestic production of SR is dominated by Styrene-Butadiene Rubber (SBR) followed by Poly Butadiene Rubber (BR). However, around 45 percent of the domestic consumption of SR was met by imports (Rubber Board, 2019). Around 61.38 per cent of the import was from Korea (27.47per cent), Russia (13.26 per cent), Japan (12.03 per cent) and USA (8.62 per cent) during the last five year period ending in 2018-19. Among the major sources of imports, Korea and Japan have trade agreements with India and the imports from these countries are eligible for tariff concessions. During the period of analysis, while the total import of products under HS 4002 increased from US $55.85 million in 1988 to US $1003.52 million in 2017 with a rate of growth of 12.44 per cent, the import from RTA countries increased from US $22.10 million to US $516.33 million with a rate of growth of 12.90 per cent. However, around 51.45 per cent of the total import of HS 4002 in 2017 was from RTA countries.

4.4.1. Tariff policies of synthetic rubber under the RTAs

India adopted more liberal tariff policies on SR (HS 4002) compared to the tariff policies of NR (HS 4001) under the RTAs (GoI, 2020; 2020a). The tariffs of SR are eliminated for imports from countries under the trade agreements SAFTA, ISLFTA, and trade agreements with Bhutan and Nepal (Table 4.6). In the case of the agreement between India and Japan tariffs will be eliminated in 11 equal annual instalments, except for products under HS 4002.31 and HS 4002.70 from the base rate of duty (GoI, 2020). Except for the product subheadings HS 4002.11 and HS 4002.70 (offered for an MOP of 50 per cent), all other products are excluded from any kind of tariff liberalisation under the trade agreements with India and Singapore. For all products except HS 4002.70 tariffs are eliminated under the trade agreements with Malaysia and AIFTA. Except for HS 4002.59 and HS 4002.70 tariffs are eliminated for imports under India Korea trade agreement (GoI, 2020). Conversely, all items of SR are excluded from providing tariff concession under the trade agreements with MERCOSUR, Chile and APTA (GoI, 2020).

Table 4.6. Tariff Concessions Offered by India for Tariff Lines under HS 4002

Name of the RTAs/ HS Code		4002 11	4002 19	4002 20	4002 31	4002 39	4002 41	4002 49	4002 51	4002 59	4002 60	4002 70	4002 80	4002 91	4002 99
	MFN 2018 (per cent)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
APTA	MOP (per cent)	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC
ISLFTA	Tariff (per cent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Singapore	MOP (per cent)	50.0	E	E	E	E	E	E	E	E	E	50.0	E	E	E
SAFTA	Base rate (MFN 2006)	12.5	12.5	12.5	10.0	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff (per cent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bhutan	Tariff (per cent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chile	MOP (per cent)	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC
MERCOSUR	MOP (per cent)	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC
Nepal	Tariff (per cent)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Korea	Base Rate (MFN 2006)	12.5	12.5	12.5	10.0	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff (per cent)	0	0	0	0	0	0	0	0	EXC	0	EXC	0	0	0
AIFTA	Base Rate (MFN 2007)	10.0	10.0	10.0	5.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	Tariff (per cent)	0	0	0	0	0	0	0	0	0	0	5.0	0	0	0
Malaysia	Tariff (per cent)	0	0	0	0	0	0	0	0	0	0	5.0	0	0	0
Japan	Base Rate (per cent)	10.0	10.0	10.0	---	10.0	10.0	10.0	10.0	10.0	10.0	---	10.0	10.0	10.0
	Category	B10	B10	B10	NA	B10	B10	B10	B10	B10	B10	NA	B10	B10	B10

Notes: (i) MOP- Margin of Preference; (ii) 4002 11: Latex; 4002 19: Other; 4002 20: Butadiene rubber (BR); 4002 31: Isobutene-isoprene (butyl) rubber (IIR); 4002 39: Other; 4002 41: Latex; 4002 49: Other; 4002 51: Latex; 4002 59: Other; 4002 60: Isoprene rubber (IR); 4002 70: Ethylene-propylene-non-conjugated diene rubber (EPDM); 4002 80: Mixtures of any product of heading 40.01 with any product of this heading; 4002 91: Latex; 4002 99: Other ; (iii) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free; (iv) EXC and E: Excluded from any concession, NA: Not applicable

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

4.4.2 Effect of tariff policies under the RTAs on synthetic rubber

The results of the gravity modelling showed that (i) GDP of the country positively and significantly affected the import of SR (ii) the distance is inversely related to the import of various forms of SR, and (iii) in the case of five tariff lines, viz., (a) HS 4002.11 (b) HS 4002.41 (c) HS 4002.59 (d) HS 4002.70 and HS 4002.80 tariff concession given by India found to be significantly affected the import of India (Table 4.7).

Table 4.7. Results of Gravity Model Estimation of Tariff Lines under HS 40.02 (NR)
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2 (7)	Prob> chi2
1.	4002.11[a]	Coeft	0.50 (0.31)	0.49*** (0.16)	-0.50 (0.68)	-1.32*** (0.45)	-1.22 (1.15)	1.00 (1.10)	-1.31* (0.70)	-17.82** (8.65)	46.26	0.00
		Z stat	1.64	3.03	-0.74	-2.93	-1.07	0.91	-1.88	-2.06		
2.	4002.19	Coeft	1.04*** (0.13)	0.80*** (0.10)	-0.89*** (0.33)	-0.30 (0.28)	0.81** (0.41)	-1.72*** (0.43)	-1.19** (0.48)	-35.48*** (3.96)	246.88	0.00
		Z stat	8.17	8.35	-2.68	-1.09	1.97	-4.00	-2.47	-8.96		
3.	4002.20	Coeft	0.76*** (0.15)	0.80*** (0.11)	-1.63*** (0.37)	-0.53 (0.35)	1.50*** (0.34)	-1.99*** (0.38)	-2.05*** (0.68)	-22.05*** (4.54)	164.59	0.00
		Z stat	5.25	7.29	-4.44	-1.52	4.42	-5.29	-3.01	-4.86		
4.	4002.31	Coeft	-0.41* (0.24)	0.93*** (0.16)	-1.31*** (0.49)	0.68 (0.93)	-0.49 (0.84)	-0.10 (0.86)	-0.41 (0.83)	3.41 (7.12)	55.53	0.00
		Z stat	-1.70	6.00	-2.66	0.73	-0.59	-0.12	-0.49	0.47		
5.	4002.39	Coeft	0.49*** (0.17)	1.40*** (0.13)	-2.52*** (0.53)	-0.04 (0.42)	1.20*** (0.36)	-0.20 (0.36)	-1.69*** (0.51)	-24.76*** (5.27)	244.64	0.00
		Z stat	2.99	10.59	-4.77	-0.08	3.36	-0.57	-3.31	-4.70		
6	4002.41[a]	Coeft	-0.05 (0.21)	0.13 (0.10)	0.03 (0.36)	1.87** (0.94)	-0.14 (0.14)	-0.37* (0.20)	-0.87*** (0.26)	0.50 (5.71)	84.00	0.00
		Z stat	-0.26	1.25	0.08	1.99	-1.05	-1.85	-3.34	0.09		
7.	4002.49	Coeft	0.01 (0.23)	1.23*** (0.22)	-0.54 (0.87)	0.38 (0.39)	-0.77 (1.16)	-0.12 (1.19)	-0.99 (1.54)	-23.30*** (7.68)	88.82	0.00
		Z stat	0.03	5.64	-0.63	0.97	-0.66	-0.10	-0.65	-3.03		
8	4002.51	Coeft	-0.34 (0.25)	1.09*** (0.24)	-3.53*** (1.11)	0.84 (0.58)	1.17** (0.50)	-1.31** (0.63)	-2.06* (1.25)	11.85 (9.53)	39.20	0.00
		Z stat	-1.34	4.49	-3.18	1.45	2.36	-2.08	-1.66	1.24		
9	4002.59	Coeft	0.43*** (0.13)	1.02*** (0.11)	-0.96** (0.39)	0.70** (0.33)	1.81*** (0.37)	-3.24*** (0.43)	-1.91*** (0.69)	-25.24*** (4.41)	229.73	0.00
		Z stat	3.24	9.60	-2.43	2.14	4.94	-7.59	-2.77	-5.72		
10.	4002.70	Coeft	0.53*** (0.15)	0.88*** (0.09)	0.11 (0.35)	1.07*** (0.35)	1.54*** (0.40)	-2.00*** (0.44)	-1.27* (0.73)	-33.69*** (4.48)	236.30	0.00
		Z stat	3.52	9.66	0.31	3.11	3.84	-4.59	-1.73	-7.52		
11.	4002.80	Coeft	1.50*** (0.31)	0.15 (0.25)	1.43 (0.97)	1.91*** (0.54)	0.28 (0.61)	-0.92 (0.70)	-0.14 (1.06)	-53.92*** (9.97)	81.47	0.00
		Z stat	4.85	0.60	1.47	3.52	0.46	-1.31	-0.14	-5.41		
12.	4002.91[a]	Coeft	-0.18 (0.45)	0.62*** (0.15)	-0.93* (0.54)	0.31 (1.22)	-0.89 (0.61)	0.43 (0.52)	-1.17* (0.63)	0.08 (11.04)	41.51	0.00
		Z stat	-0.41	4.19	-1.72	0.25	-1.45	0.84	-1.87	0.01		
13.	4002.99[a]	Coeft	-0.50*** (0.15)	0.91*** (0.15)	-0.36 (0.38)	1.00 (0.90)	0.23 (0.70)	-0.40 (0.69)	-0.41 (0.53)	-3.00 (4.76)	50.40	0.00
		Z stat	-3.38	5.96	-0.96	1.11	0.34	-0.58	-0.77	-0.63		

*** p<0.01, ** p<0.05, * p<0.10, @ RE GLS Regression
Note: (i) The figures within the parentheses are standard errors
(ii) Coeft: Coefficient

Among the five, the relationship between tariff concession and import of HS 4002.11 showed an inverse relationship. This may be due to the increasing domestic production of HS 4002.11 in the country. However, the import of these five items constituted around 20 per cent of the total import of SR. The analysis also illustrated the insignificant roles of other binary variables considered for the study.

4.5. Trends in import of reclaimed rubber (HS 4003)

India consumes around 99 per cent of the total domestic production of the RR in the country (Rubber Board, 2019a). In the total merchandise trade in RR, only less than 2 percent was the share of import during the period of analysis. Around 76.44 per cent of the import of RR was from the US (33.51 per cent), Germany (18.85 per cent), China (16.23 per cent) and Malaysia (7.85 per cent) during the last five years ending 2018-19. The country is almost self-sufficient in RR and is the only item in rubber raw materials which showed a comparative advantage in export to the world market consistently (Joseph and Hari, 2019). Moreover, the growth in import (14 per cent) was much less than that of export (24 per cent).

4.5.1. Tariff policies of reclaimed rubber under RTAs

The tariff policies of India on RR showed that only the trade agreements of India with Bhutan, Nepal and the SAFTA permitted the import of RR with zero duty rates into India (Table 4.8). The trade agreements of India with Malaysia and ASEAN provided tariff concessions for import of RR into the country. Under these trade agreements, duty rates are reduced and fixed at five per cent. Conversely, under seven trade agreements, RR is classified as a protected item and is kept outside the purview of duty-free imports.

Table 4.8. Tariff Concessions Offered by India for Tariff Lines under HS 4003

Name of the RTAs/ HS Code	4003.00	
	MFN 2018 (per cent)	10.0
APTA	MOP (per cent)	EXC
ISLFTA	Tariff (per cent)	EXC
Singapore	MOP (per cent)	E
SAFTA	Base rate (MFN 2006)	12.5
	Tariff (per cent)	0
Bhutan	Tariff (per cent)	0
Chile	MOP (per cent)	EXC
MERCOSUR	MOP (per cent)	EXC
Nepal	Tariff (per cent)	0

Korea	Base Rate (MFN 2006)	12.5
	Tariff (per cent)	EXC
AIFTA	Base Rate (MFN 2007)	10
	Tariff (per cent)	5.0
Malaysia	Tariff (per cent)	5.0
Japan	Base Rate (per cent)	---
	Category	NA

Notes: (i) MOP- Margin of Preference, (ii) EXC and E : Excluded from any concession, (iii) 4003 00: Reclaimed rubber in primary forms or in plates, sheets or strip.
Source: Collected from various notifications of the government of India, available at www.commerce.gov.in

4.5.2 Effect of tariff policies under RTAs on reclaimed rubber

Though the tariff concessions given for import of RR into India was limited to member countries of ASEAN, SAFTA and for countries such as Bhutan and Nepal, the results of the gravity analysis showed that the tariff concession given has a positive and significant relationship with imports of RR into the country (Table 4.9). No other variables exhibited such a strong relationship with the import of RR of India.

Table 4.9. Results of Gravity Model Estimation of Tariff Lines under HS 40.03 (RR) Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP - India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob>chi2
1.	4003.00	Coeft	0.24 (0.22)	-0.09 (0.15)	0.63* (0.36)	1.42** (0.57)	**-0.18 (0.47)**	0.67 (0.49)	0.78 (0.71)	-7.58 (6.68)	18.86	0.0086
		Z stat	1.09	-0.63	1.74	2.49	**-0.39**	1.36	1.11	-1.13		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i) The figures within the parentheses are standard errors
(ii) Coeft: Coefficient

4.6 Summary

The analysis shows that though historically India has been dependent heavily on the import of SR than the import of NR for domestic consumption, the recent trends indicated that the composition of imports is changing, and, in value terms, NR import is increasing than that of SR. The factors such as growing domestic consumption, low level of production of NR in the country due to the prevailing low prices, etc., are the major factors behind the growth in import of NR and the resultant changes in the composition of imports. However, since NR is not covered in any of the RTAs with

major global suppliers of NR are included, tariff liberalisation under the RTAs has no direct impact on the growth in import of NR from the partner countries of India's RTAs. The results of the analysis also revealed that it was the growth in the economy of the country which has influenced the import of NR into the country than any other variable considered for the analysis. Conversely, in the case of SR, tariff concessions given to five tariff lines, which constituted around 20 per cent of the total import of SR of India, were found to be a major factor determining the growth in import of those tariff lines into the country during the period of analysis. It is also resulted in changes in the sources of imports of SR into the country. In the case of RR also, the tariff concession given under the RTAs was major factor for the growth in imports into India.

CHAPTER 5
INTERMEDIATE RUBBER PRODUCTS

An intermediate or semi-finished product is a good which can be used as a consumer good and can be used for producing the final finished good. In the total world trade in merchandise goods, intermediate goods has considerable share and the extent of value addition varies across industries depending on the technology employed and organisation of production (OECD, 2013; Thambi, 2014). This chapter is an attempt to analyse the impact of tariff liberalisation under the RTAs of India on the import of intermediate rubber goods. The first section of the chapter dealt with the significance of the intermediate goods trade and the recent trends in intermediate rubber goods trade. In the second section, tariff policies of the intermediate rubber goods sector under the RTAs of India is analysed. Subsequently, the product sub-heading-wise tariff policies and its impacts on growth in imports of major intermediate rubber products of India are analysed. Major observations from the analysis are discussed in the last section of the chapter.

The products under the headings HS 4004, HS 4005, HS 4006, HS 4007 and HS 4008 can be considered as intermediate rubber products[11]. While the tariff headings HS 4004 and HS 4007 contains only one tariff line each at the six-digit level viz., HS 400400 and HS 400700, the tariff heading HS 4005 has four subheadings (viz., HS 4005.10, HS 4005.20, HS 4005.91 and HS 4005.99), tariff heading HS 4006 contains two subheadings (viz., HS 4006.10 and HS 4006.90) and HS 4008 contains four subheadings at the six-digit level of the HSN (viz., HS 4008.11, HS 4008.19, HS 4008.21 and HS 4008.29). Detailed product descriptions are given in Appendix A. Among the intermediate rubber products headings, products under HS 4004 and HS 4005 are the least value added and used as raw materials for the production of rubber products, and, items under other tariff headings are mainly semi-finished products. The uses of the intermediate rubber products discussed in the chapter are varied and are used for the manufacture of doormats, shoes, tyre, oil seals, hoses, brake pads, road pavings, rubberized bitumen, couplings, engine mountings, tyre retreads, garments, beadings,

[11] HS 4004: Waste, parings and scrap of rubber (other than hard rubber) and powders and granules obtained therefrom; HS 4005: Compounded rubber, unvulcanised, in primary forms or in plates, sheets or strip; HS 4006: Other forms (for example, rods, tubes and profile shapes) and articles(for example, discs and rings), of unvulcanised rubber; HS 4007: Vulcanised rubber thread and cord; HS 4008: Plates, sheets, strip, rods and profile shapes, of vulcanised rubber other than hard rubber

seals, etc. The items covered in the intermediate rubber products categories are important to the domestic industry as it is catering to the need for the production of final goods in the automotive, garments, and many other engineering goods. Though the share of India's merchandise trade in intermediate rubber products is negligible compared to other sectors of the rubber industry many of the items at the disaggregated level showed higher growth in exports and imports compared to other tariff subheadings of rubber and rubber products (Joseph et al, 2006).

5.1 Intermediate goods trade and significance of intermediate rubber products

The duality of the good, as a consumer good and as an item for the production of another finished good, indicated the significance of intermediate goods in the world trade (Kenton, 2020). Imported content account for about a quarter of OECD economies' exports, and its share in exports of China is about 30 per cent, or twice that of India (Ali and Dadush, 2011). The share of China, in world intermediate goods imports more than doubled from 4.4 per cent to 9 per cent between 2001 and 2011 (Thambi, 2014). Conversely, the share of China in the world final good import was only 5 per cent compared to its share in world final good export of 19.5 per cent in 2011 (Thambi, 2014). The share of final goods exports of China in the world final good export might be facilitated by the import of intermediate goods (OECD, 2015). This indicated the prominence of intermediate goods in the value chain of the production process. On the other hand, the import of intermediate goods of India more than doubled in global import from 0.8 per cent to 2.8 per cent between 2001 and 2011 (Thambi, 2014). It may either used by end consumers for domestic consumption or used for export production. However, in order to estimate the growth effects of exports properly, better measurement of intermediate imports is necessary (Ali and Dadush, 2011). Therefore, though negligible in value and share, in the context of growing importance of global value chain, this chapter examines the effect of tariff concession under the RTAs on the import of intermediate rubber products of India.

5.1.1. Trends in export of intermediate rubber product

More than 80 per cent of the export earnings of the intermediate rubber products of India are from products under "compounded rubber unvulcanised in primary forms/in plates sheets/strip (HS 4005)" and "plates, sheets, strip, rods and profile shapes of vulcanised rubber other than hard rubber (HS 4008)". While the share of export of HS 4005 in the total intermediate rubber products exports decreased from 39 per cent in 1988 to 26 per cent in 2017 the share of export of HS 4008 increased from 25 per cent to 66 per cent of the total export value of the intermediate product during the same period. The growth rates were 23.64 per cent and 28.72 per cent respectively for HS 4005 and HS 4008. The value of export of products under HS 4008 increased from US $ 0.3 million to US $ 83 million and the value of export of HS 4005 increased from US $ 0.5 million to US $ 32 million during the period of study. In the product group of HS 4008 tariff subheadings HS 4008.21 and HS 4008.29 accounts for around 80 per cent of the share of export. And in the export of product group HS 4005, the tariff subheadings HS 4005.10 and HS 4005.91 together have a share of more than 66 per cent during the period of study.

However, at the aggregate level, none of the product groups in the intermediate products segment showed comparative advantage consistently in exports, except "plates sheets strip, rods and profiles shapes of vulcanised rubber other than hard rubber (HS 4008)" and "waste, parings and scrap of rubber (other than hard rubber) and powders and granules obtained therefrom (HS 4004)" during the period 1996 to 2016 (Joseph and Hari, 2019). The concentration ratio (CR4) of export of HS 4004, HS 4005, HS 4006, HS 4007 and HS 4008 were 0.71, 0.41, 0.65, 0.70 and 0.42 respectively during the year 2018-19 (Table 5.1).

As in the case of raw materials, the product group which showed highest comparative advantage (HS 4008) exhibited the lowest concentration ratio. HS 4004 and HS 4007 showed higher export concentration compared to other product groups. During the period of analysis, the major export destinations of HS 4004, HS 4005, HS 4006, HS 4007 and HS 4008 of India were Australia, Spain, UAE, Turkey, and the USA respectively (Table 5.1). Moreover, among the intermediate product headings only the

Table 5.1. Top Four Destinations of Intermediate Rubber Products Exported from India (2018-19)

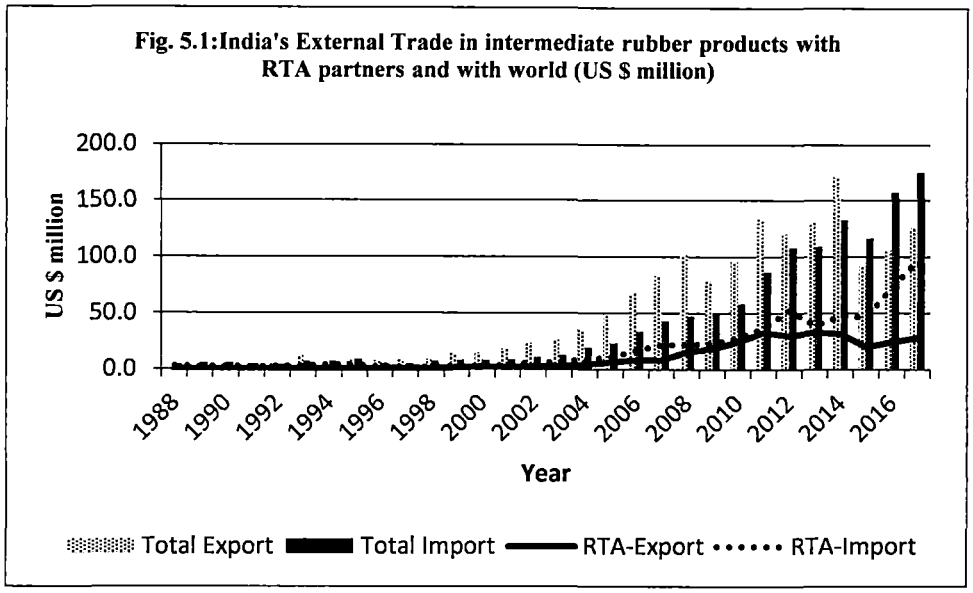
HS 4004		HS 4005		HS 4006		HS 4007		HS 4008	
Country	Share (per cent)	Country	Share (per cent)	Country	Share (per cent)	Country	Share (per cent)	Country	Share (per cent)
Australia	31.37	Spain	11.14	United Arab Emirates	40.53	Turkey	33.54	United States of America	29.32
Pakistan	17.65	Italy	11.01	Kenya	10.00	Germany	16.31	Australia	4.81
UAE	11.76	UK	9.94	Nepal	7.63	South Korea	11.38	Nepal	4.69
Sri Lanka	9.80	UAE	9.07	Saudi Arabia	7.37	Belgium	9.08	UAE	3.53
Total	70.59	Total	41.15	Total	65.53	Total	70.31	Total	42.35

Source: Estimated using the trade data available from Export Import Databank, Department of Commerce, Government of India

product heading HS 4005 exhibited the regional orientation in exports after the signing of AIFTA (Joseph and Hari, 2019a).

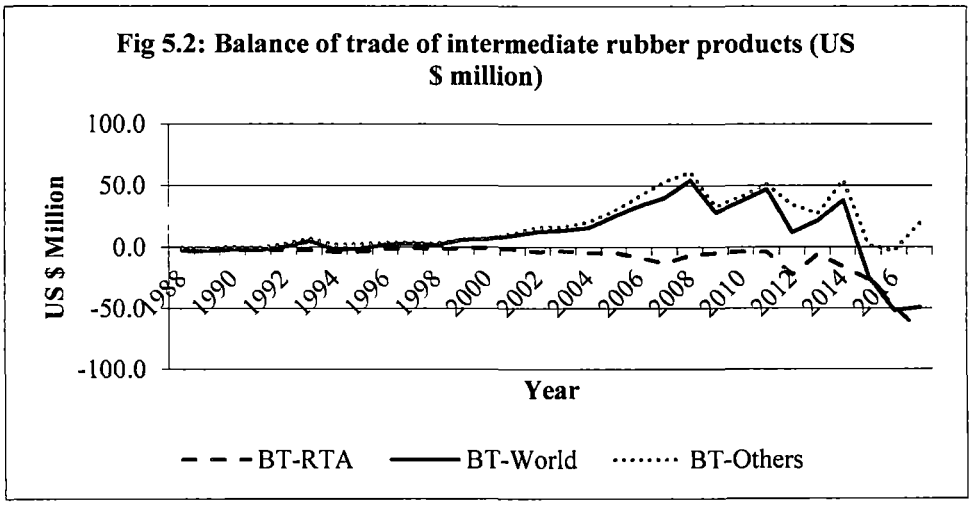
5.1.2. Trends in import of intermediate rubber products

The composition of imports into India exhibited mixed trends. Until 2003, the combined share of imports of products under HS 4007 and HS 4008 was dominant, thereafter, the import was dominated by products under HS 4005. The combined share of products under HS 4007 and HS 4008 was around 84 per cent during the year 1988 and the share came down to 24 per cent of the total intermediate rubber products import of India during the year 2017. By the same period, the share of imports of products under HS 4005 increased from 7 per cent to 65 per cent of the total intermediate rubber products imports. In the total merchandise trade in intermediate rubber products, the share of imports was around 59 per cent during the year 2017. Figure 5.1 shows the trends in export and import of intermediate rubber products of India with the world and with its RTA partners.



5.1.3. Intermediate rubber products and the balance of trade of India

The balance of trade in intermediate rubber products of India with the RTA partner countries was negative throughout the period of analysis. During the period of analysis, the total import of intermediate rubber products, the import from RTA partners and from the rest of the world grew at a rate of 14.85 per cent, 14.63 per cent, 15.16 per cent respectively. In the total intermediate rubber goods trade of India with its RTA partners, the share of import was around 65.54 per cent. However, the import from RTA countries constituted only 45.16 per cent of the total intermediate rubber goods imports of the country. As a result, the trade balance of India in the intermediate rubber products sector exhibited a surplus in most of the years (Fig 5.2).



5.2. Tariff policy, structural breaks and the growth in import of intermediate rubber products

The intermediate rubber goods trade of India exhibited negative balance of trade mainly due to the higher level of import from the RTA partner countries. During the post-RTA phase the rate of growth in import of different intermediate goods under different RTAs exhibited varied trends compared to the pre-RTA phase (Table 5.2). Therefore, an analysis of tariff policies on intermediate rubber goods is highly relevant to understand the extent of tariff liberalisation under the RTAs of India. RTAs may not be the sole factor determining the imports into the country. Therefore, structural break analysis, as suggested by Bai and Perron (1998, 2003) used to identify the shift in imports and examine other factors/events associated with the growth in import of intermediate rubber products into the country.

A closer look at the tariff policies of intermediate rubber products shows that, under the PTAs of India, the tariff concessions are offered only for the items under HS 40082100 in India MERCOSUR PTA. While under ISLFTA and SAFTA (non-LDCs) all intermediate goods are kept outside the purview of tariff concession, under the AIFTA, only three tariff lines under HS 400821 are kept as protected items. However, the import of HS 4005, HS 4006 and H 4007 exhibited higher growth during post-AIFTA phase compared to pre-AIFTA. Contrary to the tariff concessions offered for all intermediate goods under India Malaysia CECA all goods are excluded from giving any kind of tariff concession under India Singapore CECA. However, under the India-Malaysia CECA, only the rate of growth of import of tariff lines under HS 4006 and HS 4007 exhibited a higher growth rate after the trade agreement. Under the CEPA of India with Korea and Japan, except HS 400819 and HS 400829, all tariff lines are earmarked for tariff concession. However, among the items classified for tariff concessions, only the import of HS 4006 and HS 4007 under the India-Korea CEPA and the import of HS 4006 under the India-Japan CEPA showed considerable growth in import after signing the trade agreements.

Table 5.2. Rate of Growth (per cent) of Import of Intermediate Rubber Products of India during Pre and Post RTAs

		4004		4005		4006		4007		4008	
o.	Name	Pre RTA	Post RTA	Pre RTA	Post RTA	Pre RTA	Post RTA	Pre RTA	Post RTA	Pre RTA	Post RTA
	Asia Pacific Trade Agreement	---	20.28	31.09	13.08	-7.31	6.10	-47.93	-4.59	22.91	32.76
	India-Sri Lanka	---	26.02	---	9.37	---	16.29	---	18.56	---	27.37
	India-Singapore	97.06	-63.32	36.95	-9.26	-10.87	1.91	-5.23	---	3.94	3.99
	SAFTA	-0.25	60.42	25.12	-5.34	83.41	-1.30	34.32	26.73	13.85	22.46
	India-Bhutan	---	---	---	---	---	---	---	---	---	---
	Chile-India	---	---	---	---	---	---	---	---	---	---
	MERCOSUR	-67.70	-3.23	50.53	-93.11	47.30	38.24	---	---	-4.96	67.14
	India-Nepal	---	---	14.86	---	---	---	6.69	---	75.82	---
	India-Korea	-23.61	-58.35	77.40	25.40	-12.64	-37.91	-34.37	274.64	15.32	5.48
)	ASEAN India	42.29	-2.16	25.83	31.05	4.95	23.59	1.44	16.36	19.55	5.61
l	India-Malaysia	47.43	27.63	18.45	-1.80	-5.73	-41.59	2.17	14.44	36.71	29.07
?	India-Japan	27.22	-68.55	14.24	-6.08	1.42	-43.15	2.04	-13.03	9.38	34.78

Source: Estimated using the trade data provided in wits.worldbank.org

Table 5.3 shows the break periods and the corresponding import growth of intermediate rubber products from the RTA member countries during the period 1988 to 2017. The import of intermediate products showed structural breaks in different periods. Though the intermediate rubber products sector as a whole exhibited several phases of growth in imports the number of phases of import growth are more in the cases of HS 4004, HS 4005 and HS 4008 than HS 4006 and HS 4007.

Table 5.3 Growth Rates (Per Cent) upto the Break Years of Intermediate Products Imports from RTAs

4004		4005		4006		4007		4008		Total	
Year	Growth	Year	Growth	Year	Growth	Year	Growth	Year	Growth	Year	Grow
1988-92	95.64	1988-91	-12.35	1988-97	-17.59	1988-96	2.49	1988-95	25.14	1988-91	-7.4
1993-05	34.84	1992-95	83.01	1998-2017	5.0	1997-2017	13.78	1996-03	24.54	1992-95	20.3
2006-12	-22.13	1996-2007	55.98					2004-12	39.22	1996-2000	8.2
2013-17	35.93	2008-17	16.12					2013-17	4.64	2001-08	29.8
										2009-17	16.0
Total	31.33	Total	28.67	Total	7.50	Total	6.09	Total	20.28	Total	14.6

Source: Estimated using the trade data provided in wits.worldbank.org

5.3 Trends in import of waste, parings and scrap of rubber (other than hard rubber) and powders and granules obtained therefrom (HS 4004)

The items covered under this product group are mainly residuals of the rubber manufacturing industry which can be used in the manufacture of various finished products including doormats, shoes, tyre, oil seals, hoses, brake pads, road pavings, rubberized bitumen, etc. Around 67 percent of the total import of HS 4004 of India was from UK (36.17 per cent), Pakistan (15.23 per cent), USA (8.26 per cent) and UAE (7.20 per cent) during the last five years ending 2018-19. Though the import of the product increased from the member countries of RTAs from US $ 0.001 million to US $5.49 million during the period 1988 to 2017 with a rate of growth of 31.33 per cent, duty-free import was possible only from Pakistan under the SAFTA and no duty concession was available for import from countries such as the UK, the USA and the UAE. The total import is increased from US $ 0.03 million in 1988 to US$ 20.66 million with a rate of growth of 29.03 per cent during the year 2017. However, as per the import policy of the government of India, the item under EXIM code 4004 00 00 is restricted and the policy condition is "Import of used rubber tyres with one cut in bead wire and import of used rubber tubes cut in two pieces, however, is free" (DGFT, 2017).

5.3.1 Tariff policy of HS 4004 under the RTAs

The HS 4004 is classified as an excluded item for duty concession for import under India-Chile, APTA, ISLFTA, India-MERCOSUR agreements of India. Under India-Singapore CECA also the product is classified as an excluded item from duty concession. Conversely, for the import from Bhutan, Nepal and SAFTA import duty is eliminated under the trade agreements and import duty under the trade agreement with Japan shall be eliminated with 11 equal instalments starting from the base rate of duty (10 per cent). Table 5.4 gives the details.

Table 5.4. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4004

Trade Agreements	HS Code	4004 00
	MFN 2018	10.0
APTA	MOP	EXC
ISLFTA	Tariff	EXC
Singapore	MOP	E
SAFTA	Base rate (MFN 2006)	12.5
	Tariff	0
Bhutan	Tariff	0
Chile	MOP	EXC
MERCOSUR	MOP	EXC
Nepal	Tariff	0
Korea	Base Rate (MFN 2006)	12.5
	Tariff	0
AIFTA	Base Rate (MFN 2007)	10
	Tariff	0
Malaysia	Tariff	0
Japan	Base Rate	10.0
	Category	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of Preference, (ii) EXC and E: Excluded, (iii) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free
Source: collected from various notifications of the government of India, available at www.commerce.gov.in

5.3.2 Effect of tariff policies of India under the RTAs on HS 4004.00

Analysis using the gravity modelling (Table 5.5) showed expected signs for GDPs, distance between the countries, language and colonial background of the countries. Conversely, the variables tariff concession and common border did not show the expected signs, indicated that the variables do not have any influence on the import of HS 4004.00. This may be due to the restrictive import policy of items under HS 4004.

Table 5.5. Results of Gravity Model Estimation of Tariff Lines under HS 40.04
Dependent variable is ln(import of India)

Product Code		lnGDP - India	lnGDP - Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob chi2
4004.00	Coeft	1.24*** (0.17)	0.48*** (0.10)	-0.62** (0.26)	-1.49*** (0.41)	0.15 (0.55)	1.60*** (0.53)	-0.96** (0.49)	-39.46*** (5.08)	143.84	0.000
	Z stat	7.12	4.98	-2.36	-3.61	0.27	3.02	-1.93	-7.76		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i) The figures within the parentheses are standard errors
(ii) Coeft: Coefficient

5.4 Trends in import of compounded rubber, unvulcanised, in primary forms or in plates, sheets or strip (HS 4005)

Among the intermediate rubber products groups, the highest share in imports was observed in products under HS 4005 (see section 5.1.2). During the year 2017, the share of this product group was around 65 per cent of the total imports of intermediate rubber products. Around 63 per cent of the total import of HS 4005 during the last five years ending 2018-19 was from Thailand (29.34 per cent), the USA (12.17 per cent), Germany (10.78 per cent) and Italy (10.47 per cent).

Although varied trends in the composition of imports of products under the heading HS 4005 was observed until 1994, the import of items under HS 4005 from 1995 to 2015 was dominated by imports of products under the subheading HS 4005.91. Thereafter, a shift towards imports of items under the subheading 4005.10 was observed. The import of HS 4005.10 from the member countries of RTAs increased from 19.56 per cent during the year 1988 to 75.98 per cent during the year 2017. While the rate of growth of imports of HS 4005.10 from the RTA countries was 28.67 per cent the rate of growth of imports from other countries was 22.46 per cent. The higher share and growth in imports of HS 4005.10 causes the changes in the composition of imports under the product group HS 4005. The higher rate of growth of import of HS 4005.10 from RTA countries has significant implications in the domestic rubber industry as it is the compound of rubber with carbon black/silica which will reduce considerable energy consumption of the industries and can be imported at a lower rate of import duty under different RTAs. Among the four product subheadings, the share of import of HS 4005.10 in recent years and the rate of growth in imports from RTA countries were much higher compared to all other product subheadings of HS 4005.

5.4.1 Tariff policy of HS 4005 under the RTAs

All the tariff lines under HS 4005 are excluded from giving tariff concessions for imports under the trade agreements MERCOSUR, APTA, ISLFTA, India-Chile agreement and India-Singapore CECA (Table 5.6). Import duty from Bhutan, Nepal, SAFTA and Korea are eliminated. Import duty under the trade agreement with Japan shall be eliminated with 11 equal instalments starting from the base rate of duty (10 per cent). Under India-Malaysia CECA and AIFTA, except the items earmarked for tariff elimination (ie., HS 4005.10), the rate of import duty was fixed at 5 per cent.

Table 5.6. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4005

Trade Agreements	HS Code	4005 10	4005 20	4005 91	4005 99
	MFN 2018	10.0	10.0	10.0	10.0
APTA	MOP	EXC	EXC	EXC	EXC
ISLFTA	Tariff	EXC	EXC	EXC	EXC
Singapore	MOP	E	E	E	E
	Base rate (MFN 2006)	12.5	12.5	12.5	12.5
SAFTA	Tariff	0	0	0	0
Bhutan	Tariff	0	0	0	0
Chile	MOP	EXC	EXC	EXC	EXC
MERCOSUR	MOP	EXC	EXC	EXC	EXC
Nepal	Tariff	0	0	0	0
	Base Rate (MFN 2006)	12.5	12.5	12.5	12.5
Korea	Tariff	0	0	0	0
	Base Rate (MFN 2007)	10.0	10.0	10.0	10.0
AIFTA	Tariff	0	5.0	5.0	5.0
Malaysia	Tariff	0	5.0	5.0	5.0
Japan	Base Rate	10.0	10.0	10.0	10.0
	Category	B10	B10	B10	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of Preference, (ii) EXC and E: Excluded, (iii) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

5.4.2 Effect of tariff policies of India under the RTAs on HS 4005

The analysis showed that tariff concessions given under the RTAs for subheadings HS 4005.91 and HS 4005.99 are influenced positively the import of these items into India. The results of the gravity model showed that the coefficient of the variable for tariff concession is positive and highly significant (at 1 per cent level). For all the product subheadings, the GDP of India is positively (significant at 1 per cent level) affected the import. Except in the case of HS 4005.10, the GDP of the partner countries also exhibited a positive effect on imports. Though a positive relationship is found between tariff concession and import of HS 4005.10 the relationship was not significant. The shift towards imports of products under HS 4005.10 was a recent phenomenon (considerable shift in the composition of import of subheadings under the heading HS 4005 was observed from 2013 onwards) and maybe the reason for the insignificant relationship between the tariff concessions offered and import of HS 4005.10. Though the variable for distance showed the expected sign, in no product case

the relationship was significant. The language was also a major factor in determining the import of products under HS 4005. Table 5.7 gives the details.

Table 5.7. Results of Gravity Model Estimation of Tariff Lines under HS 40.05
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob >chi2
	4005.10	Coeft	1.33*** (0.33)	0.45 (0.40)	-0.11 (1.57)	**0.11 (0.68)**	3.54*** (0.55)	-3.18*** (0.54)	-1.19 (1.41)	-44.41*** (11.83)	95.05	0.0000
		Z stat	4.03	1.12	-0.07	**0.16**	6.47	-5.84	-0.85	-3.75		
	4005.20	Coeft	0.78*** (0.20)	0.30*** (0.12)	-0.21 (0.42)	**-0.10 (0.38)**	0.08 (0.41)	-0.20 (0.42)	-0.07 (0.65)	-24.91*** (6.28)	32.50	0.0000
		Z stat	3.88	2.59	-0.50	**-0.26**	0.19	-0.47	-0.11	-3.96		
	4005.91	Coeft	1.23*** (0.18)	0.65*** (0.12)	-0.38 (0.46)	**1.31*** (0.44)**	1.52** (0.65)	-0.33 (0.66)	-0.58 (0.68)	-45.43*** (0.68)	130.50	0.0000
		Z stat	7.01	5.28	-0.84	**3.00**	2.33	-0.49	-0.86	-8.30		
	4005.99@	Coeft	1.61*** (0.24)	0.79*** (0.24)	-0.16 (0.75)	**1.69*** (0.45)**	2.36*** (0.86)	-1.25 (0.84)	-0.03 (0.77)	-62.38*** (8.84)	228.21	0.0000
		Z stat	6.66	3.34	-0.21	**3.77**	2.73	-1.47	-0.04	-7.06		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i) The figures within the parentheses are standard errors
(ii) Coeft: Coefficient (iii) @ : RE GLS Regression

5.5 Trends in import of other forms (for example, rods, tubes and profile shapes) and articles (for example, discs and rings), of unvulcanised rubber (HS 4006)

The subheadings under the heading HS 4006 are 4006.10 and HS 4006.90. Around 62.56 per cent of the imports of the items under the heading HS 4006 were from Belgium (30.67 per cent), the USA (12.22 per cent), Italy (13.44 per cent) and Romania (6.22 per cent) during the last five years ending 2018-19. India imported around 62.05 per cent of the imports of subheading HS 4006.90 from the four countries mentioned above. The import of HS 4006 from RTA countries grew at a rate of 7.50 per cent compared to the rate of growth of import of 6.93 per cent from other countries. Conversely, the import of sub-heading HS 4006.90 grew at the rates of 8.03 per cent and 7.08 per cent respectively from RTA member countries and other countries. However, the share of imports of HS 4006 from RTA members in 2017 was only around 18 per cent.

5.5.1 Tariff policy of HS 4006 under the RTAs

In the intermediate product segment, the products under the heading HS 4006, from Chile, APTA, Singapore, MERCOSUR and ISLFTA are included in the exclusion list and kept outside of any kind of tariff liberalisation. Import duty from Bhutan, Nepal and SAFTA are eliminated. The import duty under the agreement with Japan will be

eliminated with 11 equal instalments starting from the base rate of duty (10 per cent). In the case of India Malaysia CECA and AIFTA, except for the items earmarked for tariff elimination (ie., HS 4006.10), the rate of import duty was fixed at 5 per cent (Table 5.8). However, the major sources of imports are countries which are not having any trade agreements with India.

Table 5.8. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4006

Trade Agreements	HS Code	4006 10	4006 90
	MFN 2018	10.0	10.0
APTA	MOP	EXC	EXC
ISLFTA	Tariff	EXC	EXC
Singapore	MOP	E	E
SAFTA	Base rate (MFN 2006)	12.5	12.5
	Tariff	0	0
Bhutan	Tariff	0	0
Chile	MOP	EXC	EXC
MERCOSUR	MOP	EXC	EXC
Nepal	Tariff	0	0
Korea	Base Rate (MFN 2006)	12.5	12.5
	Tariff	0	0
AIFTA	Base Rate (MFN 2007)	10.0	10.0
	Tariff	0	5.0
Malaysia	Tariff	0	5.0
Japan	Base Rate	10.0	10.0
	Category	B10	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of Preference, (ii) EXC and E: Excluded, (iii) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

5.5.2 Effect of tariff policies of India under the RTAs on HS 4006.00

Among the two product subheadings HS 4006.10 and HS 4006.90 the products under the latter is the major item of import from RTA partners of the country. During the period of analysis, HS 4006.10 was imported from RTA countries only in five years. Therefore, the item is not considered for the gravity model estimation. The analysis showed that only distance and GDP of the partner country have a significant relationship with the imports. All other variables exhibited an insignificant relationship with the imports of the subheading HS 4006.90 (Table 5.9). The plausible reason for the negative and insignificant relationship between the import and tariff concession

offered by India for subheading HS 4006.90 may be the higher dependence of other countries for imports.

Table 5.9. Results of Gravity Model Estimation of Tariff Lines under HS 40.06
Dependent variable is ln(import of India)

Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob>chi2
4006.90	Coeft	0.07 (0.15)	0.63*** (0.11)	-0.83** (0.42)	**-0.003 (0.46)**	0.21 (0.57)	0.25 (0.59)	-0.39 (0.56)	-9.78** (4.56)	56.62	0.0000
	Z stat	0.50	5.70	-1.97	**-0.00**	0.38	0.42	-0.69	-2.14		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i) The figures within the parentheses are standard errors
(ii) Coeft: Coefficient

5.6 Trends in import of vulcanised rubber thread and cord (HS 4007)

The four countries, namely, Malaysia (63.63 per cent), Thailand (26.10 per cent), France (5.46 per cent) and Belgium (1.17 per cent) are the major exporting countries of items under heading HS 4007 to India during the last five years. They together supplied around 96.36 per cent of the total import of India. Among the four countries, imports from Malaysia and Thailand are eligible for duty concessions. The growth in imports from member countries of RTAs during the period of study was lower than the growth in imports from other countries (6.1 per cent vs. 15.7 per cent). Conversely, the dominance of RTA member countries as a major source of import of HS 4007 is indicated by the share of import of RTA members (92.57 per cent) in the total import of HS 4007 of India.

5.6.1 Tariff policy of HS 4007 under the RTAs

Table 5.10 shows the tariff policies of HS 4007 of India under its different RTAs. No tariff concession is given under the trade agreements of APTA, ISLFTA, MERCOSUR and India-Chile agreements. Import duty from Bhutan, Nepal, Korea and SAFTA are eliminated and the duty under the agreement with Japan shall be eliminated with 11 equal instalments starting from the base rate of duty (10 per cent). Under the India-Malaysia CECA and the AIFTA, items under the heading HS 4007 are eligible for import duty concession. Imports under India-Singapore CECA are also eligible for 50 per cent margin of preference.

Table 5.10. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4007

	HS Code	4007 00
Trade Agreements	MFN 2018	10.0
APTA	MOP	EXC
ISLFTA	Tariff	EXC
Singapore	MOP	50.0
SAFTA	Base rate (MFN 2006)	12.5
	Tariff	0
Bhutan	Tariff	0
Chile	MOP	EXC
MERCOSUR	MOP	EXC
Nepal	Tariff	0
Korea	Base Rate (MFN 2006)	12.5
	Tariff	0
AIFTA	Base Rate (MFN 2007)	10.0
	Tariff	5.0
Malaysia	Tariff	5.0
Japan	Base Rate	10.0
	Category	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of Preference, (ii) EXC: Excluded, (iii) B10: Customs duties shall be eliminated in 11 equal annual instalments from the Base Rate to free
Source: collected from various notifications of the government of India, available at www.commerce.gov.in

5.6.2 Effect of tariff policies of India under RTAs on HS 4007

Though the major sources of import of HS 4007 are RTA countries and import duty concession is available for major exporting nations to India the results of the gravity modelling showed that tariff concession given under various trade agreements are not significantly affected the growth in import of HS 4007 (Table 5.11). The GDP of India, historical and geographical proximity are more important for the import of HS 4007 into India. The distance between the countries is also inversely related to the import of the product group.

Table 5.11. Results of Gravity Model Estimation of Tariff Lines under HS 40.07
Dependent variable is ln(import of India)

Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Comm colony	Common border	Constant	Wald chi2(7)	Prob>chi2
4007.00	Coeft	0.90*** (0.34)	0.08 (0.26)	-3.09*** (0.99)	0.17 (0.67)	-0.74 (0.95)	2.13** (0.91)	-3.47** (1.40)	3.27 (9.32)	64.49	0.0000
	Z stat	2.67	0.32	-3.12	0.26	-0.78	2.33	-2.48	0.35		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i) The figures within the parentheses are standard errors
(ii) Coeft: Coefficient

5.7 Trends in import of plates, sheets, strip, rods and profile shapes, of vulcanised rubber other than hard rubber (HS 4008)

The import of items under the heading HS 4008 grew at a rate of 20.28 per cent, 8.92 per cent and 11.85 per cent respectively from the member countries of RTAs, other countries, and the world during the period of analysis. The four countries, viz., China (14.22 per cent), Korea (12.55 per cent), Thailand (5.38 per cent) and Germany (11.50 per cent) together constituted 43.65 per cent of imports of HS 4008 during the last five years period ending 2018-19. Among the four major sources of import, three has trade agreements with India and has duty concession for the imports of products under HS 4008. During the period from 1988 to 2017, while the total import of HS 4008 increased from US $ 1.18 million to US $ 27.32 million, the share of RTA partners increased from 8.10 per cent to 52.91 per cent. The higher rate of growth in import from the member countries of RTAs indicated the growing dominance of RTA member countries as a major source of import of HS 4008 to India.

Under the heading HS 4008, there are four subheadings viz., HS 4008.11, HS 4008.19, HS 4008.21 and HS 4008.29. In the total import of HS 4008, around 45.42 per cent was the share of HS 4008.21 and in the total import of HS 4008.21, the share of RTA countries during the year 2017 was 55.41 per cent. The import of HS 4008.21 from RTA countries grew at a rate of 26.20 per cent and the same from other countries increased at a rate of 11.54 per cent during the period of analysis. Around 55.13 per cent of the total import of HS 4008.21 was from countries such as Sri Lanka (19.51 per cent), the USA (13.98 per cent), China (11.09 per cent) and Germany (10.56 per cent) during the last five years ending in 2018-19.

5.7.1 Tariff policy of HS 4008 under the RTAs

As in the case of all other intermediate rubber products, India excluded the products under HS 4008 from giving any tariff concessions under the trade agreements of India-Chile, APTA, India-Singapore CECA and ISLFTA (Table 5.12). Import under the MERCOSUR was also excluded from giving any kind of tariff concession except in the case HS 4008.21. Import duty from Bhutan, Nepal and SAFTA are eliminated. While items under the subheadings HS 4008.11 and HS 4008.21 can be imported freely from Korea other product subheadings are excluded from any kind of tariff concession. Except in the case of HS 4008.19 and HS 4008.21, import duty under the trade agreement with Japan shall be eliminated with 11 equal instalments starting from the base rate of duty (10 per cent). Under India Malaysia CECA, the import duty is fixed at 5 per cent except for HS 4008.21, which are excluded from any kind of tariff reduction/elimination under the agreement. In the case of AIFTA also the import duty was fixed at 5 per cent.

Table 5.12. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4008

Trade Agreements	HS Code	4008 11	4008 19	4008 21	4008 29
	MFN 2018	10.0	10.0	10.0	10.0
APTA	MOP	EXC	EXC	EXC	EXC
ISLFTA	Tariff	EXC	EXC	EXC	EXC
Singapore	MOP	E	E	E	E
SAFTA	Base rate (MFN 2006)	12.5	12.5	12.5	12.5
	Tariff	0	0	0	0
Bhutan	Tariff	0	0	0	0
Chile	MOP	EXC	EXC	EXC	EXC
MERCOSUR	MOP	EXC	EXC	20.0	EXC
Nepal	Tariff	0	0	0	0
Korea	Base Rate (MFN 2006)	12.5	12.5	12.5	12.5
	Tariff	0	EXC	0	EXC
AIFTA	Base Rate (MFN 2007)	10.0	10.0	10.0	10.0
	Tariff	5.0	5.0	5.0	5.0
Malaysia	Tariff	5.0	5.0		5.0
Japan	Base Rate	10.0	---	10.0	---
	Category	B10	NA	B10	NA

Notes: (i) For product description see Appendix A (ii) MOP- Margin of Preference, (ii) EXC and E: Excluded, (iii) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free, (iv) NA: Not applicable

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

5.7.2 Effect of tariff policies of India under the RTAs on HS 4008

Though the import of HS 4008 exhibited considerable growth from member countries of RTAs, none of the product subheadings exhibited significant relationship between import and tariff concession offered under the agreements (Table 5.13). In the case of major products of imports, such as HS 4008.11 and HS 4008.21, having considerable duty concession under the trade agreements, the GDPs of India and its partner countries exhibited significant relationship with the import. The coefficient of the variable distance exhibited significant inverse relationship with imports of all the product sub-headings except HS 4008.19.

Table 5.13. Results of Gravity Model Estimation of Tariff Lines under HS 40.08
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP - India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob> chi2
1	4008.11	Coeft	0.88*** (0.21)	0.77*** (0.15)	-0.84* (0.51)	0.03 (0.50)	1.41*** (0.54)	-0.74 (0.54)	0.21 (0.54)	-35.34*** (6.33)	89.82	0.00
		Z stat	4.19	5.14	-1.65	0.07	2.62	-1.37	0.38	-5.58		
2	4008.19[a]	Coeft	-0.18 (0.33)	0.78*** (0.25)	-1.37 (1.01)	-0.36 (0.66)	0.73 (0.69)	-0.47 (0.76)	0.70 (0.74)	-2.96 (9.30)	113.05	0.00
		Z stat	-0.56	3.12	-1.35	-0.54	1.05	-0.61	0.95	-0.32		
3	4008.21	Coeft	0.69*** (0.23)	0.73*** (0.24)	-2.15** (0.86)	-0.19 (0.63)	0.66 (0.68)	0.31 (0.69)	-1.02 (0.74)	-16.21** (7.52)	43.11	0.00
		Z stat	2.92	3.08	-2.51	-0.29	0.97	0.44	-1.38	-2.15		
4	4008.29	Coeft	0.11 (0.15)	1.15*** (0.13)	-2.85*** (0.46)	0.05 (0.38)	0.23 (0.49)	0.54 (0.50)	-1.49** (0.58)	-6.27 (4.67)	105.73	0.00
		Z stat	0.78	-.03	-6.19	0.13	0.47	1.07	-2.57	-1.34		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i) The figures within the parentheses are standard errors
(ii) Coeft: Coefficient (iii) @ : RE GLS Regression

5.8 Summary

The analysis shows the extent of India's import dependency on RTA partner countries for intermediate rubber products. Though the trade balance of intermediate rubber products of India was positive during most of the years it was negative with the RTA countries throughout the period of analysis. Moreover, the import of intermediate rubber products from the RTA countries exhibited different shifts in growth in imports. However, the analysis shows that, though historically India depends on its RTA partner countries for the import of intermediate rubber products, only two product subheadings viz., HS 4005.91 and HS 4005.99, under the intermediate products category exhibited

positive and significant relationship with the tariff reduction under the RTAs and the import. It shows that more than the tariff policy, the growth in the domestic economy of India is the prime reason for higher import growth of items under the intermediate products groups into the country.

CHAPTER 6
NON-TYRE RUBBER PRODUCTS

The rubber products manufacturing industry in India started with the establishment of Dixie Rubber Factory Ltd in Bengal in 1920 (George, 1981 and Mohanakumar and George, 1999). Subsequently, in 1923, for the production of rubber covered cables Bengal Water Proofs Works Ltd. was established (Thomas and Panikkar, 2000). Under the colonial patronage, there had been a phenomenal growth in small-scale general rubber goods manufacturing industries in the country mainly to cater the requirements of defence, railways and the general industrial sector in the backdrop of the Second World War (GoI, 1947; Mohanakumar and George, 1999). The growth and development of the rubber industry during the period 1947-91, was the result of inward market orientation under the protected policy regime. Thereafter, the industry opened for export-oriented production (George, 2015).

Since several items in the non-tyre rubber products category are produced by the micro, small and medium enterprises, the shift in policy affected the non-tyre sector seriously and resulted in shrinkages of the domestic non-tyre rubber products manufacturing sector of India (Joseph et al, 2006; Joseph and George, 2013; George, 2015). As a result, the number of licensed manufacturers in the country came down from more than 5500 in the mid-90s to 3845 in 2018-19 (Rubber Board, 2003; 2019) and the import of rubber and rubber products, especially from the partner countries of RTAs of India increased at a higher rate than its exports (Joseph and George, 2016a). Several studies were reported earlier the threat of import through the RTA routes on the domestic rubber products manufacturing industry of India (Joseph et al, 2006; Joseph and George, 2016; 2016a; George, 2015). In this context, focus of the present chapter is to analyse the impact of tariff liberalisation under the RTAs of India on the import of non-tyre rubber products. Section one of the chapter analyse the trends in the external trade of non-tyre rubber products of India. In the second section, tariff policies and changes in import growth are analysed. It is followed by a product heading/subheading-wise analysis of import of non-tyre rubber products of India and the last section provides the concluding observations.

6.1 Non-tyre rubber products

Non tyre rubber products can be broadly classified into dry-rubber based products and latex-based rubber products. The total merchandise trade in non-tyre rubber products of India increased from US$ 42.95 million in 1988 to US $ 1586.16 million in 2017. During the period, the share of merchandise trade with RTA member countries increased from 27.74 per cent to 34.49 per cent. The products covered under the heading HS 4009:Tubes, pipes and hoses, of vulcanised rubber other than hard rubber, with or without their fittings (for example, joints, elbows, flanges); HS 4010: Conveyor or transmission belts or belting of vulcanised rubber; HS 4014: Hygienic or pharmaceutical articles (including teats), of vulcanised rubber other than hard rubber, with or without fittings of hard rubber; HS 4015: Articles of apparel and clothing accessories (including gloves, mittens and mitts) for all purposes, of vulcanised rubber other than hard rubber; HS 4016: Other articles of vulcanised rubber other than hard rubber, and HS 4017: Hard rubber (for example, ebonite) in all forms, including waste and scrap; articles of hard rubber, are considered as non-tyre rubber product groups.

6.1.1. Trends in export of non-tyre rubber products

In the total merchandise trade of non-tyre rubber products of India, the export from India increased from US$16.13 million in 1988 to US $743.98 million during the year 2017. During the period, the share of export to RTA partners of India also increased considerably (10.51 per cent to 17.97 per cent). While the total non-tyre rubber products exports grew at a rate of 13.99 per cent the growth in export to RTA countries was 15.29 per cent. Though the rate of growth in export of non-tyre products to RTA countries was higher than that of the export to other countries (13.82 per cent) the share of non-tyre rubber products export to RTA countries was much lower than that of India's export to other countries. During the year 2017, the share of export to RTA countries (17.97 per cent) was much lower than the share of export to other countries (82.03 per cent). Except in the case of HS 4016, rate of growth in export of headings under the non-tyre rubber products category to RTA countries was higher than that of export to the rest of the world[12]. However, in the total export of non-tyre rubber

[12] While the growth rate of export to RTA countries was 21.85 per cent, 11.35 per cent, 18.82 per cent, 14.51 per cent, 17.16 per cent and 9.17 per cent respectively for product headings of HS 4009, HS 4010,

products to the world and to the RTA countries, the export was dominated by the products under the category of HS 4016[13]. The peculiarity of the product category HS 4016 is the dominance of manufacturing units in the micro, small and medium enterprises category. As per the official estimates of the Government of India, the total value of export of HS 4016 during the year 2018-19 was US $467.99 million. The value of export of HS 4009, HS 4010, HS 4014, HS 4015 and HS 4017 was US $166.83 million, US $ 143.82 million, US $ 54.12million, US $ 43.05 million and US $ 2.43 million respectively during the year 2018-19 (DGCI&S, 2020).

However, a study on the export competitiveness of rubber and rubber products of India (Joseph and Hari, 2019) showed that among the non-tyre rubber products, the major export earning product headings HS 4016 and HS 4009 never showed positive values in RSCA during the period of analysis. And the country was unable to sustain the comparative advantage enjoyed by the product group HS 4015 during the initial years of the analysis. The product heading HS 4014 showed positive values in RSCA consistently throughout the twenty-one year period from 1996 to 2016 (Joseph and Hari, 2019). It is also found that in contrast to the regional orientation found in exports of HS 4015 and HS 4017 during the pre-AIFTA phase, none of the non-tyre rubber products exhibited regional orientation and comparative advantage in exports to ASEAN countries after the AIFTA (Joseph and Hari, 2019a). Major export destinations of non-tyre rubber products of India are the developed countries compared to other segments of rubber and rubber products (Joseph and Hari, 2019). However, in the non-tyre rubber products groups export, concentration ratio was the highest for HS 4017 (0.67) followed by HS 4009 (0.48), HS 4010 (0.44) HS 4014 (0.41), HS 4016 (0.37), and HS 4015 (0.26) respectively during the year 2018-19 (Table 6.1).

HS 4014, HS 4015, HS 4016 and HS 4017 the corresponding rate of growth of export to other countries were 19.40 per cent, 10.96 per cent, 10.81 per cent, 8.08 per cent, 20.39 per cent, 5.90 per cent.

[13] During the year 2017, in the total export of non-tyre rubber products of India, the share of export of product headings HS 4009, HS 4010, HS 4014, HS 4015, HS 4016 and HS 4017 were 16.60%per cent, 16.00 per cent, 7.36 per cent, 5.38 per cent, 54.48 per cent and 0.17 per cent respectively and in the export to RTA countries, the shares of exports were 21.96 per cent, 12.94 per cent, 17.03 per cent, 3.76 per cent, 43.95 per cent and 0.28 per cent respectively.

Table 6.1. Export Concentration of Non-Tyre Rubber Products of India (2018-19)

HS 4009		HS 4010		HS 4014		HS 4015		HS 4016		HS 4017	
Country	Share (per cent)	Country	Share (per cent)	Country	Share (per cent)	Country	Share (per cent)	Country	Share (per cent)	Country	Share (per cent)
U S A	30.09	U S A	23.47	Brazil	16.65	Iran	11.89	U S A	17.64	U Arab Emirates	36.63
U K	8.00	Russia	7.65	U S A	12.01	Poland	5.20	Germany	8.64	Qatar	12.76
Germany	5.39	Germany	7.43	South Africa	7.02	Ethiopia	4.83	U K	6.27	Saudi Arabia	11.11
China P Rp	4.55	U Arab Emirates	5.08	China P Rp	5.71	Spain	4.23	Netherland	4.83	U S A	6.17
Total	48.03	Total	43.64	Total	41.39	Total	26.16	Total	37.38	Total	66.67

Source: Estimated using the trade data from Export Import Databank, Department of Commerce, Government of India

6.1.2. Trends in imports of non-tyre rubber products

In the total import of non-tyre rubber products during the year 2017 the share of RTAs was 49.08 per cent. The trends in import from the member countries of RTAs of India indicated consistent increase in the share of import in total merchandise trade in non-tyre rubber products[14]. This is in contrast to the declining share of imports of non-tyre rubber products in the total merchandise trade with the world[15]. The growth in import of non-tyre rubber products from the RTA partners (16.04 per cent) was also higher than that of import from other countries (12.22 per cent). In effect, the value and share of import of non-tyre rubber products from the partner countries of RTAs are increasing at a faster pace than the imports from the rest of the world. As in the case of export, the major product category of non-tyre rubber products imported into India was HS 4016. During the year 2017, import of HS 4016 constituted 63.83 per cent of the total import of non-tyre rubber products (worth US $ 842.18 million) and 54.86 per cent of the import from RTA partners[16]. The rate of growth of import of product heading HS 4016 from the member countries of RTAs of India was also higher (15.55 per cent) than that of import from the rest of the world (13.10 per cent). The rate of growth of import

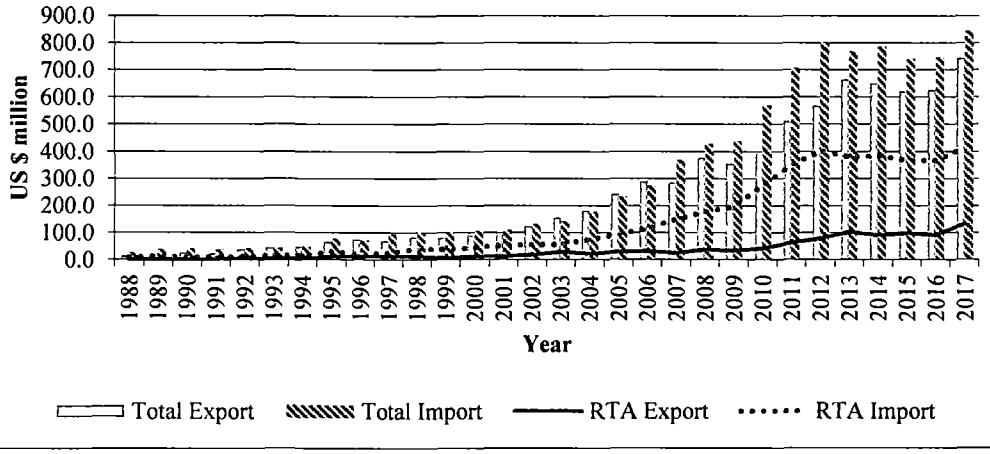
[14] In the case of total merchandise trade in non-tyre rubber products of India with the RTAs, the share of import increased from 38.10 per cent in 1988 to 49.08 per cent in 2017.

[15] In the total merchandise trade of non-tyre rubber products of India with the world the share of import declined from 62.44 per cent in 1988 to 53.10 per cent in 2017.

[16] The shares of HS 4009, HS 4010, HS 4014, HS 4015 and HS 4017 were 16.26 per cent, 9.64 per cent, 1.10 per cent, 8.77 per cent and 0.41 per cent respectively in the total import of non-tyre rubber products of India during the year 2017.

from RTA member countries were 18.67 per cent, 16.05 per cent, 5.65 per cent, 30.81 per cent and 9.85 per cent[17] respectively for product headings HS 4009, HS 4010, HS 4014, HS 4015 and HS 4017. However, in the external trade of non-tyre rubber products while the imports from RTA countries grew faster than exports (16.04 per cent vs 15.29 per cent) the imports from other countries grew at a slower pace than exports (12.22 per cent vs 13.82 per cent) during the period of analysis. Fig 6.1 shows the trends in external trade in non-tyre rubber products with the World and with the RTA partners during the period of analysis.

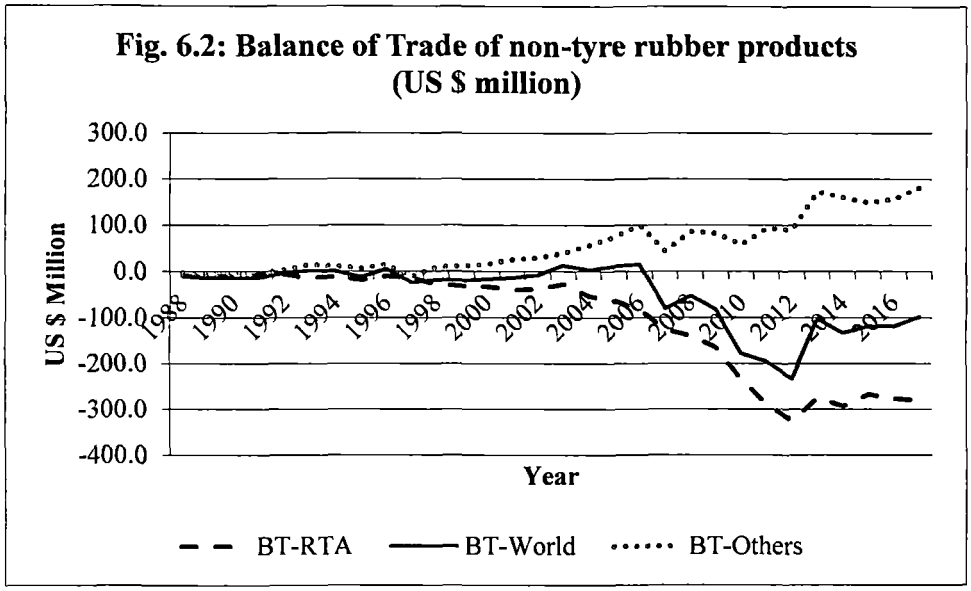
Fig. 6.1:India's external trade in non-tyre rubber products with RTA partners and with world (US $ million)



6.1.3. Non-tyre rubber products and the balance of trade of India

Fig 6.1 exhibited the prominence of import from RTA member countries, especially since the year 2000. This has resulted in a huge trade deficit of non-tyre rubber products of India (Fig 6.2). During the year 2017, in the non-tyre rubber products, while the trade with RTA member countries exhibited trade deficit to the tune of US $ 279.63 million the country had a positive trade balance with other countries (US $ 181.44 million). The positive trade balance with other countries considerably reduced the trade deficit in non-tyre rubber products of India with the world to the extent of US $ 98.19 million in 2017.

[17] the rate of growth in import from other countries were 12.00 per cent, 9.66 per cent, 8.94 per cent, 19.77per cent and 12.97 per cent respectively for HS 4009, HS 4010, HS 4014, HS 4015 and HS 4017.



6.2. Tariff policy, structural breaks and the growth in import of non-tyre rubber products

Though the import of non-tyre rubber products from the RTA partner countries exhibited considerable growth in the twenty-first century, the disaggregate level analysis shows that the growth in imports during the post-RTA phase was lower for tariff lines under HS 4009 and HS 4010 under all the trade agreements (Table 6.2). The growth in import of HS 4014 exhibited higher rate of growth under APTA, SAFTA and India-Japan CEPA. Conversely, in the case of import of HS 4015 and HS 4016, only the import from ISLFTA exhibited a higher rate of growth during the post-RTA phase. In the case of all the twelve RTAs of India, the import of HS 4017 exhibits deceleration during the post-RTA phase compared to the pre-RTA phase. Analysis of the tariff policy indicated that under APTA, tariff concessions are given for all items under the non-tyre rubber products category except those under HS 4014 (Appendix C). Tariff concession is given for items under ISLFTA (except those under HS 4016 and HS 4017), SAFTA (except those under HS 4016 and HS 4017 from Pakistan and Sri Lanka) and ASEAN also (Appendix D, F2 and I). Under India-Singapore CECA, items under HS 4009, 4010, 4016 and HS 4017 (Appendix E) are excluded from tariff concessions and under India-Malaysia CECA, product under all the headings of non-tyre rubber products (Appendix J) are earmarked for tariff concessions. The products under HS 4009, HS 4010 and HS 4016 are classified as protected items under the CEPAs with Korea and Japan (Appendix H and K).

Table 6.2. Rate of Growth (per cent) of Import of Non-Tyre Rubber Products of India during Pre and Post RTA

Sl No.	Trade agreements	4009		4010		4014		4015		4016		4017	
		Pre RTA	Post RTA	Pre RTA	Post RTA	Pre RTA	Post RTA	Pre RTA	Post RTA	Pre RTA	Post RTA	Pre RTA	Post RTA
1	Asia Pacific Trade Agreement	74.80	18.21	33.51	19.09	-14.03	17.38	40.15	23.54	27.95	21.23	32.78	12.92
2	India-Sri Lanka	---	25.65	---	47.61	---	10.81	-3.33	29.81	-2.92	16.48	---	7.17
3	India-Singapore	11.82	-5.30	15.29	-6.32	5.32	12.03	3.02	2.17	12.89	5.99	11.01	-34.61
4	SAFTA	4.65	1.49	54.88	13.24	-40.04	24.63	19.95	9.85	44.70	-2.22	39.68	-35.34
5	India-Bhutan	---	---	---	---	---	---	---	---	---	---	---	---
6	Chile-India	---	-40.16	---	35.41	---	---	---	---	---	26.94	---	---
7	MERCOSUR	35.00	-13.65	29.39	-21.34	---	---	-48.72	---	21.80	1.95	-36.82	---
8	India-Nepal	-70.55	---	86.81	-92.54	---	---	---	---	50.86	-4.91	32.64	-81.23
9	India-Korea	50.29	0.56	31.79	2.25	-9.94	-13.91	7.14	-1.24	25.80	0.49	18.37	-35.64
10	ASEAN India	20.30	7.30	20.16	0.38	7.27	-2.19	25.94	23.27	17.07	4.17	17.90	-11.30
11	India-Malaysia	25.47	14.72	41.07	-20.21	5.32	-18.47	40.86	13.96	18.60	4.56	3.12	-40.86
12	India-Japan	17.65	-13.39	12.23	-11.44	7.38	59.30	24.23	-9.40	12.19	-3.77	4.24	-16.66

Source: Estimated using the trade data from wits.worldbank.org

Though the rate of growth in import of non-tyre rubber products from the RTA member countries was higher than that of exports and the rate of growth of imports from other countries, product headings under the non-tyre rubber product sector exhibited structural breaks in imports in different periods during the period of analysis. Table 6.3 gives the break years and the corresponding growth rates of non-tyre rubber products imports of India from its RTA partner countries.

Table 6.3 Growth Rates (per cent) upto the Break Years of Non-Tyre Rubber Products Imports from the RTA member countries

4009		4010		4014		4015		4016		4017		Total Non-tyre products	
Year	Growth	Year	Growth	Year	Growth	Year	Growth	Year	Growth	Year	Growth	Year	Growth
1988-11	20.89	1988-10	17.89	1988-97	-4.70	1988-92	163.61	1988-09	15.55	1988-04	13.99	1988-92	1.04
2011-17	-3.07	2011-17	-5.49	1998-06	26.77	1993-05	15.79	2010-17	2.01	2005-17	-6.56	1993-02	15.51
Total	18.67	Total	16.05	2007-17	2.37	2006-17	24.69	Total	15.55	Total	9.85	2003-12	24.10
				Total	5.65	Total	30.81					2013-17	1.34
												Total	16.04

Source: Estimated using the trade data provided in wits.worldbank.org

While the dry-rubber based products imports showed only one major shift in imports into India during the period of study the latex-based rubber products imports exhibited two major shifts in imports from the RTA member countries. Table 6.3 showed that in the total non-tyre rubber products imports from the RTA countries, the phases which was followed by the economic liberalisation of India exhibited a sharp increase in the growth in imports. Conversely, the last phase exhibited very low rate of growth in imports from the RTA member countries (Table 6.3). Prima facie, the shifts in imports of major non-tyre product groups are coincided with the entry of trade agreements such as India Korea CEPA, India Japan CEPA, AIFTA, India Malaysia CECA and SAFTA. However, only a disaggregate level analysis will provide detailed information on the impact of tariff liberalisation under the RTAs on the import of items under these product groups. Therefore, the following sections examine the impact of tariff liberalisation under the RTAs on the import of non-tyre rubber products into India at the disaggregate level.

6.3 Trends in import of tubes, pipes and hoses, of vulcanised rubber other than hard rubber, with or without their fittings (For example, joints, elbows, flanges) (HS 4009)

The rate of growth of import of products under the heading HS 4009 was 14.31 per cent and the import increased from US $3.17 million to US$ 136.92 million during the study period. The share of imports from RTA partner countries increased from 24.75 per cent to 53.25 per cent during the same period. Around 48 per cent of the import was from China (14.30 per cent), Japan (13.16 per cent), Thailand (10.52 per cent) and Germany (10.08 per cent) during the last five years ending 2017. Among the four major sources of imports, India has trade agreements with China, Japan and Thailand.

According to HS 1988, there are five tariff sub-headings under HS 4009 viz., HS 4009.10, HS 4009.20, HS 4009.30, HS 4009.40 and HS 4009.50 (for concordance table see Appendix B). The rate of growth of import of the five subheadings from the member countries of RTAs was 19.77 per cent, 26.74 per cent, 36.02 per cent, 28.53 per cent and 15.55 per cent respectively for HS 4009.10, HS 4009.20, HS 4009.30, HS 4009.40 and HS 4009.50. This was much higher than the rate

of growth in imports from other countries[18]. Moreover, except in the case of HS 4009.50, the share of imports from the RTA partners was much higher than that of imports from other countries for all subheadings[19]. However, the import composition from the RTA members of the product subheadings exhibited notable changes during the period of analysis. Though the product subheading HS 4009.50 was the major item of import during the initial years of the analysis its share came down from 88.69 per cent of the total import in 1988 to 38.76 per cent of HS 4009 in 2017. However, the value of import of HS 4009.50 increased from US $ 0.70 million in 1988 to US $28.26 million in 2017. During the year 2017, the composition of import of subheadings HS 4009.10, HS 4009.20, HS 4009.30, HS 4009.40 and HS 4009.50 were 16.76 per cent, 17.04 per cent, 13.24 per cent, 14.20 per cent, 38.76 per cent respectively.

6.3.1 Tariff policy of HS 4009 under the RTAs

The tariff policy of the subheadings HS 4009 indicated that under the trade agreements with MERCOSUR and Chile, no subheadings are allowed to import without duty or reduced duty rates into India. From Bhutan, Nepal, SAFTA and ISLFTA the subheadings under HS 4009 can be imported freely into India. The products which can be imported with reduced duty rates and without import duty into India under the trade agreements APTA, India-Japan, India-Singapore, India-Malaysia and India-Korea are given in Table 6.4. Under the AIFTA, except subheadings HS 4009.31, HS 4009.41 and HS 4009.42, others can be imported into India without import duty. In effect, the import of HS 4009 is possible under liberalised tariffs into India from all the major trade agreements.

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[18] the rate of growth in import from other countries were 13.94 per cent, 13.04 per cent, 24.68 per cent, 14.14 per cent and 10.65 per cent respectively for subheadings HS 4009.10, HS 4009.20, HS 4009.30, HS 4009.40 and HS 4009.50.

[19] The share of import of subheadings HS 4009.10, HS 4009.20, HS 4009.30, HS 4009.40 and HS 4009.50 from the RTA member countries were 72.10 per cent, 62.76 per cent, 60.10 per cent, 55.15 per cent and 43.25 per cent respectively during the year 2017.

Table 6.4. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4009

Trade Agreements	HS Code	4009 11	4009 12	4009 21	4009 22	4009 31	4009 32	4009 41	4009 42
	MFN 2018	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
APTA	MOP	EXC	EXC	EXC	15.0	EXC	15.0	EXC	15.0
ISLFTA	Tariff	0	0	0	0	0	0	0	0
Singapore	MOP	E	50.0	50.0	50.0	E	50.0	50.0	E
SAFTA	Base rate (MFN 2006)	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff	0	0	0	0	0	0	0	0
Bhutan	Tariff	0	0	0	0	0	0	0	0
Chile	MOP	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC
MERCOSUR	MOP	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC
Nepal	Tariff	0	0	0	0	0	0	0	0
Korea	Base Rate (MFN 2006)	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff	0	0	EXC	0	EXC	0	EXC	7.5
AIFTA	Base Rate (MFN 2007)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	Tariff	0	0	0	0	5.0	0	5.0	5.0
Malaysia	Tariff	0	0	0	0	5.0	0	5.0	5.0
Japan	Base Rate	10.0	10.0	---	10.0	---	10.0	---	---
	Category	B10	B10	NA	B10	NA	B10	NA	NA

Notes: (i) For product description see Appendix A (ii) MOP- Margin of Preference, (iii) EXC and E: Excluded, (iv) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free, (v) NA: Not applicable

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

6.3.2 Effect of tariff policies of India under the RTAs on HS 4009

Table 6.5 gives the results of the gravity model estimation. The major sources of the import of HS 4009 was RTA partner countries. Though several product subheadings under the HS 4009 can be imported with reduced duty rates or without import duty into India under the RTAs the tariff concessions given only for HS 4009.10 positively and significantly influenced its growth in import into India. More than the tariff concession the influence of GDPs of India and its partner countries was more on the growth in import of subheadings under HS 4009 into India.

Table 6.5. Results of Gravity Model Estimation of Tariff Lines under HS 40.09
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2 (7)	Prob>chi2
1	4009.10[@]	Coeft	0.75*** (0.21)	0.86*** (0.28)	-0.72 (0.77)	0.62* (0.35)	0.99 (1.30)	-0.01 (1.25)	0.34 (0.91)	-35.27*** (8.14)	76.66	0.0000
		Z stat	3.64	3.07	-0.93	1.77	0.76	-0.01	0.37	-4.33		
2	4009.20	Coeft	0.68** (0.28)	1.12*** (0.26)	-3.52*** (1.02)	0.76 (0.56)	0.68 (1.07)	-0.37 (1.07)	-1.39* (0.76)	-14.74 (8.99)	72.87	0.0000
		Z stat	2.43	4.31	-3.44	1.35	0.64	-0.35	-1.82	-1.64		
3	4009.30[@]	Coeft	1.45*** (0.31)	0.73*** (0.25)	0.41 (0.77)	-0.57 (0.89)	-0.92 (1.09)	-0.06 (1.05)	-1.28 (1.43)	-60.59*** (-60.59)	85.98	0.0000
		Z stat	4.67	2.98	0.54	-0.64	-0.84	-0.06	-0.90	-6.74		
4	4009.40[@]	Coeft	0.88*** (0.30)	0.98*** (0.31)	-0.82 (0.77)	-0.40 (0.76)	-0.81 (0.95)	0.43 (0.92)	-2.01* (1.17)	-40.14*** (8.09)	48.56	0.0000
		Z stat	2.96	3.11	-1.07	-0.52	-0.86	0.47	-1.73	-4.96		
5	4009.50	Coeft	0.47*** (0.13)	1.21*** (0.09)	-1.09*** (0.30)	0.41 (0.40)	0.48 (0.50)	-0.86* (0.50)	-2.86*** (0.55)	-31.11*** (3.84)	356.68	0.0000
		Z stat	3.68	13.78	-3.59	1.05	0.96	-1.73	-5.23	-8.11		

*** p<0.01, ** p<0.05, * p<0.10

Note: (i) HS 4009.10: Tubes, pipes and hoses of vulcanized rubber not reinforced/otherwise combined with other materials without fittings; HS 4009.20: Tubes, pipes and hoses of vulcanized rubber reinforced/otherwise combined only with metal materials without fittings; HS 4009.30: Tubes, pipes and hoses of vulcanized rubber reinforced/otherwise combined only with textile materials without fittings; HS 4009.40: Tubes, pipes and hoses of vulcanized rubber reinforced/otherwise combined with other materials, without fittings; HS 4009.50: Tubes, pipes and hoses of vulcanized rubber other than hard rubber with fittings

(ii)The figures within the parentheses are standard errors, (iii) Coeft: Coefficient (iv) @ : RE GLS Regression

6.4 Trends in import of conveyor or transmission belts or belting of vulcanised rubber (HS 4010)

According to HS 1988 classification, there are only three product subheadings viz., HS 4010.10, HS 4010.91 and HS 4010.99 under the heading HS 4010. Among the three subheadings, the share of import of HS 4010.99 (83.87 per cent) was much higher than that of other subheadings during the year 2017. During the period of analysis, the import of HS 4010.99 from the RTA member countries grew at a rate of 14.46 per cent and increased from US $ 0.86 million in 1988 to US 30.40 million in 2017. Conversely, the import from other countries increased from US $ 3.18 million to US $ 37.70 million in 2017 with a lower rate of growth of 9.31 per cent. However, the share of import of HS 4010.99 from the member countries of RTAs increased from 21.20 per cent in 1988 to 44.64 per cent in 2017. As per the latest classification, there are ten product subheadings under the heading HS 4010 (For concordance table see Appendix B).

However, around 57.89 per cent of the import of HS 4010 during the last five years ending in 2018-19, was from China (23.88 per cent), Germany (17.02 per cent), Japan (9.35 per cent) and the USA (7.64 per cent). The import of heading HS 4010 from RTA countries grew at a rate of growth of 16.05 per cent and its value increased from US $0.92 million in 1988 to US $ 38.07 million in 2017. Conversely, the import from other countries exhibited a lower rate of growth in import (9.66 per cent), and is increased from US$ 3.96 million to US $ 43.13 million in 2017. Though the rate of growth of import from other countries was lower than RTA countries its share in the total import of HS 4010 was higher than that of import from RTA countries (53.11 per cent) even in 2017. However, the share of RTAs in total import of HS 4010 showed remarkable growth in 2017 (46.89 per cent) compared to 1988 (18.77 per cent).

6.4.1 Tariff policy of HS 4010 under the RTAs

While the tariff policies of India provided complete protection to the sector under the trade agreement with MERCOSUR and Chile the domestic market of HS 4010 is completely opened up for import from countries such as Bhutan, Nepal, SAFTA and ISLFTA (Table 6.6). Under APTA, only two tariff lines are given tariff concession for import and others are excluded from any tariff concession. The import duty for all the tariff lines will be eliminated under India Japan agreement at 11 equal instalments from the base rate of duty of 10 per cent. Under India-Singapore CECA except few products classified for duty-free imports and one item in the exclusion list others are permitted for import with reduced duty rates. Under the AIFTA and India-Korea CEPA majority of the tariff lines are classified for duty-free imports into India. Though China and Japan are the two major sources of imports and have trade agreements with India, Japan will benefit considerably due to (i) India offered duty concession for almost all subheadings under the India-Japan CECA (ii) all the product subheadings except HS 4010.11 and HS 4010.12 are included in the exclusion list under APTA, and (iii) the major item of import is HS 4010.99, which is in the exclusion list under the APTA.

Table 6.6. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4010

Trade Agreements	HS Code	4010. 11	4010. 12	4010. 19	4010. 31	4010. 32	4010. 33	4010. 34	4010. 35	4010. 36	4010. 39
	MFN 2018	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
APTA	MOP	15.0	15.0	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC
ISLFTA	Tariff	0	0	0	0	0	0	0	0	0	0
Singapore	MOP	0	0	0	50.0	50.0	50.0	E	50.0	50.0	50.0
SAFTA	Base rate (MFN 2006)	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff	0	0	0	0	0	0	0	0	0	0
Bhutan	Tariff	0	0	0	0	0	0	0	0	0	0
Chile	MOP	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC
MERCOSUR	MOP	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC
Nepal	Tariff	0	0	0	0	0	0	0	0	0	0
Korea	Base rate (MFN 2006)	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff	0	0	0	EXC	EXC	0	0	0	0	0
AIFTA	Base rate (MFN 2007)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	Tariff	0	0	0	0	5.0	0	5.0	5.0	0	0
Malaysia	Tariff	0	0	0	0	5.0	0	5.0	5.0	0	0
Japan	Base rate	10.0	10.0	10.0	10.0	---	10.0	10.0	---	10.0	10.0
	Category	B10	B10	B10	B10	NA	B10	B10	NA	B10	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of preference, (iii) EXC and E: Excluded, (iv) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free, (v) NA: Not applicable

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

6.4.2 Effect of tariff policies of India under the RTAs on HS 4010

Though the rate of growth of import of items under HS 4010 showed higher growth in imports from RTA partner countries and exhibited a considerable increase in the share of imports, the tariff concession given by India influenced only the import of product subheading HS 4010.10 considerably (Table 6.7). This product subheading can be imported without duty or with reduced duty rates into India under all trade agreements except the agreements with MERCOSUR and Chile. More than any other variable, the GDP of India and other countries influenced highly the growth in import of products under heading HS 4010 into India during the period of analysis.

Table 6.7. Results of Gravity Model Estimation of Tariff Lines under HS 40.10
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob >chi 2
1	4010.10	Coeft	0.59*** (0.17)	1.35*** (0.14)	-2.71*** (0.54)	1.59*** (0.32)	-0.21 (0.40)	0.18 (0.44)	-2.98*** (0.50)	-26.08*** (5.45)	255.85	0.00
		Z stat	3.38	9.70	-5.00	4.96	-0.53	0.41	-5.91	-4.78		
2	4010.91	Coeft	0.55** (0.22)	0.86*** (0.16)	-0.77 (0.58)	-0.08 (0.47)	0.42 (0.69)	-0.91 (0.69)	0.21 (0.92)	-28.12*** (6.45)	210.63	0.00
		Z stat	2.54	5.54	-1.32	-0.18	0.61	-1.32	0.23	-4.36		
3	4010.99	Coeft	0.50*** (0.14)	1.39*** (0.11)	-2.18*** (0.39)	-0.27 (0.46)	0.17 (0.60)	-0.03 (0.61)	-2.61*** (0.67)	-27.40*** (4.58)	258.12	0.00
		Z stat	3.45	13.24	-5.65	-0.59	0.29	-0.05	-3.88	-5.98		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i) HS 4010.10: Conveyor/Transmission belts/belting of trapezoidal cross-section (V-belts and V-belting); HS 4010.91: Conveyor/Transmission belts/belting of vulcanized rubber of a width exceeding 20 cm; HS 4010.99: Other conveyor/Transmission belts/belting of vulcanized rubber
(ii)The figures within the parentheses are standard errors
(iii) Coeft: Coefficient

6.5 Trends in import of hygienic or pharmaceutical articles (including teats), of vulcanised rubber other than hard rubber, with or without fittings of hard rubber (HS 4014)

The two sub-headings under the heading HS 4014 are HS 4014.10 and HS 4014.90. During the last five years ending 2018-19, the combined share of four countries viz., Belgium (20.69 per cent), China (20.43 per cent), France (17.14 per cent) and Singapore (13.14 per cent) in the total import of HS 4014 of India was 71.40 per cent. The value of import of HS 4014 was US$9.24 million during the year 2017. In the total import, around 46.88 per cent was the share of RTA member countries in 2017. Moreover, the rate of growth of imports from other countries (8.94 per cent) was higher than that of RTA members (5.65 per cent) during the period of analysis.

The composition of import of products under HS 4014 showed considerable changes during the period of analysis. During the year 1988 in the total import of HS 4014 the share of HS 4014.10 was 88.74 per cent and the share came down to 10.62 per cent in the year 2017. However, in the total import of HS 4014.10, around 97.53 per cent was from the RTA partner countries and the import from RTA countries grew at a rate of 0.81 per cent compared to the negative rate of growth of import from (-6.79 per cent) other countries. Conversely, in the case of import of HS 4014.90, the share of RTA member countries was 40.86 per cent during the year 2017

and the rate of growth of import from RTA members (19.27 per cent) and from other countries (19.70 per cent) was almost similar.

6.5.1 Tariff policy of HS 4014 under the RTAs

Except under India-MERCOSUR, India-Chile, APTA[20] and India-Singapore[21] agreements, both the tariff subheadings of HS 4014 can be imported into India under the RTAs without paying import duty[22]. Table 6.8 gives the details.

Table 6.8. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4014

RTAs	HS Code	4014 10	4014 90
	MFN 2018	10.0	10.0
APTA	MOP	EXC	EXC
ISLFTA	Tariff	0	0
Singapore	MOP	0	50.0
SAFTA	Base rate (MFN 2006)	12.5	12.5
	Tariff	0	0
Bhutan	Tariff	0	0
Chile	MOP	EXC	EXC
MERCOSUR	MOP	EXC	EXC
Nepal	Tariff	0	0
Korea	Base rate (MFN 2006)	12.5	12.5
	Tariff	0	0
AIFTA	Base rate (MFN 2007)	0	10.0
	Tariff	0	0
Malaysia	Tariff	0	0
Japan	Base rate	10.0	10.0
	Category	B10	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of Preference, (iii) EXC: Excluded, (iv) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free
Source: collected from various notifications of the government of India, available at www.commerce.gov.in

6.5.2 Effect of tariff policies of India under RTAs on HS 4014

Table 6.9 shows the results of the gravity model estimation. It shows that the tariff concession given to product subheading HS 4014.10 has positive and significant effect on the import of the item into India. Though among the subheadings, the major item of import is HS 4014.90, since the major sources of import are not RTA member

[20] subheadings under HS 4014 are kept outside the purview of tariff liberalisation
[21] subheading HS 4014 has given an MOP of 50 per cent
[22] the import duty for all items will be eliminated under India Japan agreement at 11 equal instalments from the base rate of duty of 10 per cent

countries, the import of the product subheading did not exhibit any relationship with the tariff concessions offered under the RTAs.

Table 6.9. Results of Gravity Model Estimation of Tariff Lines under HS 40.14
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP-India	lnGDP-Partner	Ln Distance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob>chi2
1	4014.10	Coeft	-1.41*** (0.35)	0.78** (0.30)	-3.74** (1.29)	1.27** (0.61)	0.78 (0.77)	0.83 (0.85)	0.19 (1.18)	51.69*** (10.65)	27.06	0.0003
		Z stat	-4.04	2.57	-2.90	2.07	1.02	0.98	0.16	4.85		
2	4014.90[a]	Coeft	1.03*** (0.33)	0.60 (0.38)	-1.26 (1.24)	-0.78 (0.77)	1.80*** (0.58)	-0.75 (0.70)	1.60 (1.15)	-32.24*** (9.31)	112.04	0.0000
		Z stat	3.12	1.57	-1.01	-1.01	3.10	-1.07	1.39	-3.46		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i)The figures within the parentheses are standard errors
(ii) Coeft: Coefficient, (iii) @ RE GLS Regression

6.6 Trends in import of articles of apparel and clothing accessories (including gloves, mittens and mitts) for all purposes, of vulcanised rubber other than hard rubber (HS 4015)

The value of import of HS 4015 into India during the year 2017 was US $ 73.83 million. There are only three subheadings under the product heading HS 4015 viz., HS 4015.11, HS 4015.19 and HS 4015.90. Around 90.73 per cent of the total import of products under the heading HS 4015 was from Malaysia (61.21per cent), Sri Lanka (14.25 per cent), Thailand (11.78 per cent) and Indonesia (3.49 per cent) during the last five years ending in 2018-19. All the four countries has trade agreements with India. In the total import of HS 4015 the share of RTA partner countries was 95.86 per cent during the year 2017. The total import of HS 4015 grew at a rate 28.30 per cent during the period of analysis. The rate of growth in import from the RTA member countries of India (30.81per cent) was much higher than the rate of growth in import from other countries (19.77 per cent) during the period of analysis.

The value and share of the total import of the subheadings HS 4015.11, HS 4015.19 and HS 4015.90 were US $18.99 million, US $ 42.35 million, US $ 12.49 million, and 25.72 per cent, 57.36 per cent and 16.92 per cent respectively during the year 2017. During the period of analysis, the import of the subheadings HS 4015.11, HS 4015.19 and HS 4015.90 grew at a rate of 28.99 per cent, 26.90 per cent and 30.20 per cent respectively. The major item of import was HS 4015.19. Around 99.32 per cent of the import of HS 4015.19 was from the member countries of RTAs during the year

2017 and the import from the RTA member countries grew at a rate of 29.77 per cent during the period of analysis. As in the case of HS 4015.19, the major sources of import of HS 4015.11 are the RTA member countries and in 2017, the share of RTA partners was 98.75 per cent.

6.6.1 Tariff policy of HS 4015 under the RTAs

The tariff policy of HS 4015 under the RTAs are given in Table 6.10. It shows that the imports from MERCOSUR, Chile and APTA members are excluded from any kind of tariff concessions for the import of subheadings under HS 4015 into India. Under the India-Singapore CECA, except the tariff subheading HS 4015.11[23], other kinds of gloves can be imported without import duty. Under India Japan CEPA the import duty for all items will be eliminated at 11 equal instalments from the base rate of duty of 10 per cent. Under all other trade agreements, all the three subheadings of HS 4015 can be imported without paying import duty in India. This indicated that imports of subheadings under HS 4015 from all the major sources can be done without paying import duty in India under various trade agreements.

Table 6.10. Tariff Concessions Offered by India for Tariff Lines under HS 4015

	HS Code	4015 11	4015 19	4015 90
Trade Agreements	MFN 2018	10	10	10
APTA	MOP	EXC	EXC	EXC
ISLFTA	Tariff	0	0	0
Singapore	MOP	50	0	0
SAFTA	Base rate (MFN 2006)	12.5	12.5	12.5
	Tariff	0	0	0
Bhutan	Tariff	0	0	0
Chile	MOP	EXC	EXC	EXC
MERCOSUR	MOP	EXC	EXC	EXC
Nepal	Tariff	0	0	0
Korea	Base rate (MFN 2006)	12.5	12.5	12.5
	Tariff	0	0	0
AIFTA	Base rate (MFN 2007)	10	10	10
	Tariff	0	0	0
Malaysia	Tariff	0	0	0
Japan	Base rate	10	10	10
	Category	B10	B10	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of Preference, (iii) EXC: Excluded, (iv) B10: Customs duties shall be eliminated in 11 equal annual instalments from the Base Rate to free

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

[23] which has offered 50 per cent of the MOP

6.6.2 Effect of tariff policies of India under the RTAs on HS 4015

The results of the gravity model estimation (Table 6.11) shows that all the product subheadings have positive relationship with imports and tariff concession offered. But, in the case of none of the product subheadings, the relationship is significant. It is also found that the general economic growth (GDP) of India has significant relationship with the import of all the three subheadings. The plausible reasons for insignificant relationship with the tariff concession and import of HS 4015 from RTA member countries are (i) the status of these countries as world leaders in exports of products under the heading HS 4015, and (ii) the historical dominance of these countries in the domestic market of India.

Table 6.11. Results of Gravity Model Estimation of Tariff Lines under HS 40.15
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Comm on colony	Common border	Constant	Wald chi2(7)	Prob >chi2
1	4015.11[a]	Coeft	0.88*** (0.29)	0.23 (0.23)	-1.05 (1.00)	0.83 (0.90)	-1.56 (0.97)	2.45** (0.95)	0.08 (1.78)	-19.96* (10.73)	23.26	0.0015
		Z stat	3.00	1.01	-1.05	0.93	-1.61	2.58	0.04	-1.86		
2	4015.19	Coeft	0.93** (0.37)	0.42 (0.33)	-1.79 (1.29)	0.50 (50)	-0.98 (0.76)	2.50** (0.81)	-1.88 (1.66)	-19.48* (11.54)	36.75	0.0000
		Z stat	2.53	1.26	-1.38	0.99	-1.30	3.09	-1.13	-1.69		
3	4015.90	Coeft	1.51*** (0.27)	0.31 (0.23)	-0.46 (0.92)	0.21 (0.38)	0.40 (0.76)	0.28 (0.78)	0.78 (1.09)	-43.08*** (8.95)	61.56	0.0000
		Z stat	5.57	1.31	-0.50	0.56	0.53	0.36	0.71	-4.81		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i)The figures within the parentheses are standard errors
(ii) Coeft: Coefficient, (iii) @: RE GLS Regression

6.7 Trends in import of other articles of vulcanised rubber other than hard rubber (HS 4016)

The major product subheadings of HS 4016 are HS 4016.10, HS 4016.91, HS 4016.92, HS 4016.93, HS 4016.94, HS 4016.95 and HS 4016.99. The major sources of import of product heading HS 4016 of India are the USA (14.45 per cent), Germany (12.84 per cent), China (12.03 per cent) and Japan (11.71 per cent) during the last five years ending in 2018-19. The four countries together had a combined share of 51.03 per

cent of the total import into India. Among the four countries, China and Japan has trade agreements with India. The import of heading HS 4016 grew at a rate of 13.97 per cent during the period of analysis. During the year 2017, the value of import of HS 4016 was US $ 537.54 million and around 42.19 per cent of the import was from the RTA member countries. Though the share of import from the member countries of RTAs was lower than that of other countries the rate of growth of import from RTA countries (15.55 per cent) was higher than that of the import from other countries (13.10 per cent) during the period of analysis. While the import from RTA countries increased from US $5.47 million in 1988 to US $226.76 million in 2017, the import from other countries increased from US $8.40 million in 1988 to US $ 310.77 million in 2017.

Among the product subheadings, the share of import of HS 4016.10 was negligible. Hence, the product category is not considered for further analysis. The value of import of subheadings HS 4016.91, HS 4016.92, HS 4016.93, HS 4016.94, HS 4016.95 and HS 4016.99 were US $4.69 million, US$ 1.84 million, US $278.11 million, US$ 1.17 million, US $ 5.97 million, US $ 245.76 million respectively and the share of import of these product subheadings in the total import of HS 4016 were 0.87 per cent, 0.34 per cent, 51.74 per cent, 0.22 per cent, 1.11 per cent, 45.72 per cent respectively during the year 2017. The subheading HS 4016.93 (51.74 per cent) and HS 4016.99 (45.72 per cent) together constituted around 97.46 per cent of the total import of HS 4016 during the year 2017 and the rate of growth of import of these subheadings were 14.16 per cent and 13.77 per cent during the period of analysis. The import of HS 4016.93 showed an increase from US$6.54 million in 1988 to US $278.11 million in 2017. But, its share of imports from the member countries of RTAs reduced from 50.85 per cent in 1988 to 35.58 per cent in 2017. However, the rate of growth in import indicated that the import from RTAs grew marginally higher (14.49 per cent) than that of the import from other countries (14.07 per cent). The import from RTAs was more fluctuating than that of the import from other countries as is seen from the coefficient of variations (CV) (103.60 per cent vs. 96.62 per cent). The import of HS 4016.99 showed an increase from US $7.07 million in 1988 to US $245.76 million in 2017. Its share of import from the member countries of RTAs increased from 29.40 per cent in 1988 to 48.55 per cent in 2017. Moreover, the growth in import of HS 4016.99 from the member countries of RTAs also exhibited higher rate of growth (16.54 per cent)

compared to the rate of growth in import (12.22 per cent) from other countries during the period of analysis.

6.7.1 Tariff policy of HS 4016 under the RTAs

All the product sub-headings of HS 4016 under MERCOSUR, ISLFTA and India-Singapore CECA are excluded from any kind of tariff reduction or elimination. Under APTA, except HS 4016.91 and HS 4016.99, all the products are excluded from the purview of duty reduction or elimination. Under India-Malaysia CECA and AIFTA, except 4016.93 and HS 4016.99, which can be imported at a reduced rate of 5per cent, other product subheadings can be imported without duty. Under India-Korea CEPA, except HS 4016 93, all other subheadings can be imported freely into India. The import duty for all items will be eliminated under India-Japan CEPA at 11 equal instalments from the base rate of 10 per cent. All the subheadings of HS 4016 can be imported without import duty into India under the trade agreements between India- Bhutan, India-Nepal and under the SAFTA. In effect, among the major sources of imports, Japan and China will be the major beneficiaries of the duty concession offered under the trade agreements. Import from Japan will have the advantage of including both the major items of imports such as HS 4016.93 and HS 401699 in the category of items for duty-free imports into India. Table 6.12 gives the details.

Table 6.12. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4016

Trade Agreements	HS Code	4016 10	4016 91	4016 92	4016 93	4016 94	4016 95	4016 99
	MFN 2018	10.0	10.0	10.0	10.0	10.0	15.0	10.0
APTA	MOP	EXC	14.0	EXC	EXC	EXC	EXC	14.0
ISLFTA	Tariff	EXC	EXC	EXC	EXC	EXC	EXC	EXC
Singapore	MOP	E	E	E	E	E	E	E
SAFTA	Base rate (MFN 2006)	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff	0	0	0	0	0	0	0
Bhutan	Tariff	0	0	0	0	0	0	0
Chile	MOP	EXC	EXC	EXC	EXC	EXC	EXC	80
MERCOSUR	MOP	EXC	EXC	EXC	EXC	EXC	EXC	EXC
Nepal	Tariff	0	0	0	0	0	0	0
Korea	Base rate (MFN 2006)	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff	0	0	0	EXC	0	0	0
AIFTA	Base rate (MFN 2007)	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	Tariff	0	0	0	5.0	0	0	5.0
Malaysia	Tariff	0	0	0	5.0	0	0	5.0
Japan	Base rate	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	Category	B10	B10	B10	B10*	B10	B10	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of preference, (iii) EXC and E: Excluded, (iv) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free (v) B10*: Except HS 40169360, which is excluded from any commitment of reduction or elimination of customs duties

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

6.7.2 Effect of tariff policies of India under the RTAs on HS 4016

Among the major subheadings HS 4016.93 and HS 4016.99, the growth in imports of HS 4016.99 showed positive and significant relationship with the tariff concessions given under the RTAs (Table 6.13). Moreover, the import is also positively and significantly related to the GDPs of India as well as its trading partners. Among all other subheadings of HS 4016, substantial growth in imports was exhibited by subheading HS 4016.99. In the case of HS 4016.93, though a positive relationship with import and the tariff concession offered was observed the relationship was not significant. However, all other variables exhibited significant relationship with the import of HS 4016.93. Except in the case of HS 4016.92 and HS 4016.94, imports had significant and positive relationship with the GDP of India. Except in the case of HS 4016.94, the growth in imports exhibited positive and significant relationship with the GDP of the RTA partners of India.

Table 6.13. Results of Gravity Model Estimation of Tariff Lines under HS 40.16
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob> chi2
1	4016.91	Coeft	0.90*** (0.15)	0.74*** (0.11)	-1.29*** (0.40)	-0.35 (0.34)	0.82** (0.39)	-0.07 (0.41)	0.71 (0.49)	-31.42*** (4.37)	142.95	0.0000
		Z stat	6.17	7.07	-3.22	-1.03	2.08	-0.16	1.44	-7.19		
2	4016.92[a]	Coeft	0.04 (0.26)	0.65* (0.37)	-1.67** (0.84)	0.40 (0.45)	0.39 (0.52)	-0.06 (0.54)	2.78*** (0.71)	-4.45 (11.09)	134.72	0.0000
		Z stat	0.15	1.76	-1.98	0.88	0.75	-0.11	3.93	-0.40		
3	4016.93	Coeft	0.68*** (0.10)	1.58*** (0.06)	-2.07*** (0.27)	0.06 (0.18)	1.33*** (0.31)	-0.89*** (0.32)	-3.80*** (0.58)	-37.33*** (3.31)	907.70	0.0000
		Z stat	6.91	24.38	-7.73	0.30	4.23	-2.77	-6.55	-11.26		
4	4016.94[a]	Coeft	0.21 (0.31)	0.75 (0.51)	-1.53 (1.31)	-2.34*** (0.61)	-0.37 (1.07)	1.79* (0.98	0.70 (1.38)	-12.03 (9.93)	73.49	0.0000
		Z stat	0.67	1.46	-1.18	-3.86	-0.34	1.82	0.81	-1.21		
5	4016.95[a]	Coeft	0.42** (0.18)	0.90*** (0.29)	-0.18 (0.54)	0.18 (0.35)	-0.55 (0.63)	0.72 (0.67)	-0.75 (1.03)	-32.58*** (8.65)	33.43	0.0000
		Z stat	2.32	3.08	-0.32	0.53	-0.87	1.08	-0.73	-3.77		
6	4016.99[a]	Coeft	0.71*** (0.17)	1.11*** (0.20)	-0.49 (0.73)	0.55* (0.29)	1.28 (0.79)	-0.45 (0.78)	-2.33 (1.62)	-40.11*** (6.69)	224.14	0.0000
		Z stat	4.28	5.59	-0.68	1.92	1.62	-0.57	-1.44	-6.00		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i)The figures within the parentheses are standard errors
(ii) Coeft: Coefficient

6.8 Trends in import of hard rubber (for example, ebonite) in all forms, including waste and scrap; articles of hard rubber (HS 4017)

Around 70.64 per cent of the total import of product heading HS 4017 was from the USA (26.90 per cent), Spain (21.87 per cent), Germany (13.96 per cent) and China (7.91 per cent) during the last five years ending in 2018-19. The value of import of HS 4017 increased from US $0.18 million in 1988 to US $3.46 million in 2017. The rate of growth in imports was 12.22 per cent during the period of analysis. While the import from RTA member countries increased from US $ 0.05 million in 1988 to US$ 0.48 million in 2017 with a growth rate of 9.85 per cent the import from other countries increased from US $ 0.14 million in 1988 to US $2.98 million in 2017 with a rate of growth of 12.97 per cent. During the period of the analysis, the share of imports from RTA countries decreased from 25.96 per cent in 1988 to 13.83 per cent in 2017.

6.8.1 Tariff policy of HS 4017 under the RTAs

India's tariff policy of HS 4017 under the RTAs (Table 6.14) indicated that under the trade agreements MERCOSUR, Chile, APTA, ISLFTA and India-Singapore no tariff concession is given. The import duty for all items will be eliminated under the

India Japan CEPA at 11 equal instalments from the base rate. Under all other trade agreements, imports of HS 4017 is possible without any import duty.

Table 6.14. Tariff Concessions Offered by India for Tariff Lines under HS 4017

	HS code	4017 00
Trade Agreements	MFN 2018	10.0
APTA	MOP	EXC
ISLFTA	Tariff	EXC
Singapore	MOP	E
SAFTA	Base rate (MFN 2006)	
	Tariff	0
Bhutan	Tariff	0
Chile	MOP	EXC
MERCOSUR	MOP	EXC
Nepal	Tariff	0
Korea	Base rate (MFN 2006)	12.5
	Tariff	0
AIFTA	Base rate (MFN 2007)	10.0
	Tariff	0
Malaysia	Tariff	0
Japan	Base rate	10.0
	Category	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of preference, (iii) EXC and E: Excluded, (iv) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

6.8.2 Effect of tariff policies of India under RTAs on HS 4017

The result of the gravity model estimation (Table 6.15) showed that the GDP of India and the partner countries as well as the distance exhibited expected signs and is significantly related to the import of the products into India. However, the tariff concession given under the trade agreements had no relationship with the growth in imports into India during the period of analysis.

Table 6.15. Results of Gravity Model Estimation of Tariff Lines under HS 40.17
Dependent variable is ln(import of India)

Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob> chi2
4017.00	Coeft	0.29** (0.15)	0.77*** (0.12)	-0.82** (0.40)	-0.23 (0.37)	-0.41 (0.44)	0.73 (0.46)	-0.75 (0.53)	-18.57*** (4.51)	110.68	0.0000
	Z stat	2.01	7.13	-2.04	-0.62	-0.94	1.58	-1.41	-4.11		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i) The figures within the parentheses are standard errors
(ii) Coeft: Coefficient

6.9 Summary

The analysis shows that the import of non-tyre rubber products from the RTA partners of India is growing at a higher rate than the import from the rest of the world. One of the reasons for the growing negative balance of trade in non-tyre rubber products of India since the year 2000 is the higher level of inflow of non-tyre rubber products from the RTA member countries. The analysis also showed that latex-based products exhibited more shift in imports than the imports of dry-rubber based non-tyre rubber products. However, the disaggregate level analysis shows that tariff policies under the RTAs positively and significantly affected growth in imports of only four subheadings viz., HS 4009.10, HS 4010.10, HS 4014.10 and HS 4016.99. Among the product groups which showed import growth due to tariff liberalisation under the RTAs, the items under HS 4016.99 assumes more importance as it covers several items produced by the micro, small and medium enterprises (MSMEs) in the country. Moreover, the analysis shows that the growth in GDPs of the countries also influenced imports into the country.

CHAPTER 7
TYRES AND ALLIED RUBBER PRODUCTS

With the entry of foreign companies such as Firestone (1920), Goodyear (1922), Dunlop (1926) and India Tyre and Rubber Company (1930), the history of Indian tyre industry begins (BICP, 1988). This is followed by the setting-up of Dunlop India Ltd. in Kolkata in 1936 (Mohanakumar and George, 1999). Though in value terms tyre industry is the biggest among the value chain of the rubber industry there are apprehensions about its competitiveness and capacity to withstand the competition under the RTAs of India (Mohanakumar and George, 2001). Therefore, this chapter analyses the effect of tariff liberalisation under the RTAs on imports of tyres and allied products into India. In the first section of the chapter a brief introduction on the Indian tyre and allied products industry are given. The recent trends in merchandise trade in tyres and allied products are also given in the section. A brief analysis on the tariff policies of Indian tyre industry are given in the second section. Subsequent sections analyses the tariff heading/subheading-wise tariff policies and its impacts on growth in import of major tyres and allied products of India. The results of the analysis are discussed in the last section of the chapter.

The tyre sector consists of product headings HS 4011: New pneumatic tyres of rubber, HS 4012: Retreaded or used pneumatic tyres of rubber, solid or cushion tyres, Tyre treads and tyre flaps, of rubber, and HS 4013: Inner tubes, of rubber. The heading HS 4011 has seven subheadings such as HS 4011 10; HS 4011 20; HS 4011 30; HS 4011 40; HS 4011 50; HS 4011 91 and HS 4011 99. The heading HS 4012 consists of three subheadings such as HS 4012 10; HS 4012 20; HS 4012 90 and the heading HS 4013 consisted of three subheadings such as HS 4013.10; HS 4013.20 and HS 4013.90 (a detailed product description of subheadings are given in Appendix A).

7.1 Indian tyre industry

The tyre industry is the biggest consumer of raw rubber. Rubber imports into the country is primarily depended on the requirements of the tyre sector (Joseph and George, 2013a). The sector exhibited phenomenal growth in terms of consumption of raw materials. During the period 1987-88, around 58 per cent of the rubber were consumed by the tyre sector and it increased to more than 70 per cent of the total

consumption of rubber in the country during the year 2018-19 (Rubber Board, 1991; 2019). According to Automotive Tyre Manufacturers Association (ATMA) of India, the tyre industry's turnover in 2018-19 was US $ 9 billion and there are 41 tyre companies with 62 plants in the country (ATMA, 2020). During the year 2018-19, India exports US $ 1.8 billion worth of new pneumatic tyres and the value of imports into the country was US $429 million (DGCI&S, 2020). In comparison with the 12.06 per cent growth in exports the import of tyres and allied product grew at a rate of 20.79 per cent. However, in the total merchandise trade in tyres and allied products, the share of export was much higher (78.80 per cent) than that of import (21.20 per cent) during the year 2017.

7.1.1. Trends in export of tyres and allied rubber products

The export basket of tyres and allied products are dominated by products under HS 4011 compared to the products under HS 4012 and HS 4013. The value of export of tyre and allied products to RTA member countries increased from US $ 9.66 million during 1988 to US $ 437.98 million during the year 2017. The value of export of products under HS 4011 to the RTA member countries alone was US $ 6.9 million and US$ 401.83 million respectively during the years 1988 and 2017. Conversely, the export of HS 4011 to other countries increased from US$ 39.97 million during the year 1988 to US $ 1246.71 million during the year 2017 and the total export during the same period increased from US $ 46.87 million to US $1648.55 million. This indicated that though the growth in export to RTA members was higher than the growth in export to other countries the value of export to RTA members was only less than one fourth (24.38 per cent) of the total export of products under HS 4011 during the year 2017.During the year 2017, in the total export of tyres and allied products to the RTA member countries, the share of HS 4011, HS 4012 and HS 4013 were 91.75 per cent, 4.28 per cent, 3.97 per cent respectively and to the rest of the world the shares were 93.78 per cent, 2.37 per cent, 3.85 per cent respectively. The export of HS 4011 exhibited higher rate of growth to RTA member countries (13.76 per cent) compared to the export to other countries (11.65 per cent) during the period of analysis. Conversely, no considerable difference in the rate of growth is observed in the case of export of products under HS 4012 and HS 4013 to the RTA member countries and to the countries outside the trade agreements during the period of analysis.

In comparison with the new tyres (HS 4011) and used/retreaded tyres (HS 4012) the total value of exports and share of inner tubes of rubber (HS 4013) was much lower. However, among the three product headings, only the inner tubes of rubber (HS 4013) consistently showed competitiveness in export during a period from 1996 to 2016 (Joseph and Hari, 2019). Except during the years 2009, 2010 and 2011 the new pneumatic tyres of rubber also exhibited competitiveness in export (Joseph and Hari, 2019). The concentration ratio of export of India's tyre and tube segment showed CR (4) of 0.29, 0.37 and 0.29 respectively for HS 4011, HS 4012 and HS 4013 during the year 2018-19. This indicated lower export concentration for product groups which exhibited export competitiveness in the world market. The product groups in tyres and allied products also showed comparatively lower CRs compared to the product groups in the raw material (Chapter 4) and intermediate product (Chapter 5) of rubber and rubber products (Joseph and Hari, 2019). The lower export concentration and higher comparative advantage in the world market indicated the competitiveness of India's tyres and allied sector vis-a-vis other value added rubber products. However, the export of product headings HS 4011 and HS 4012 are highly oriented towards ASEAN region (Joseph and Hari (2019a). Table 7.1 shows the major export destinations of products under HS 4011, HS 4012 and HS 4013 of India during the period 2018-19.

Table 7.1. Top Four Export Destinations of Tyre and Tubes of India (2018-19)

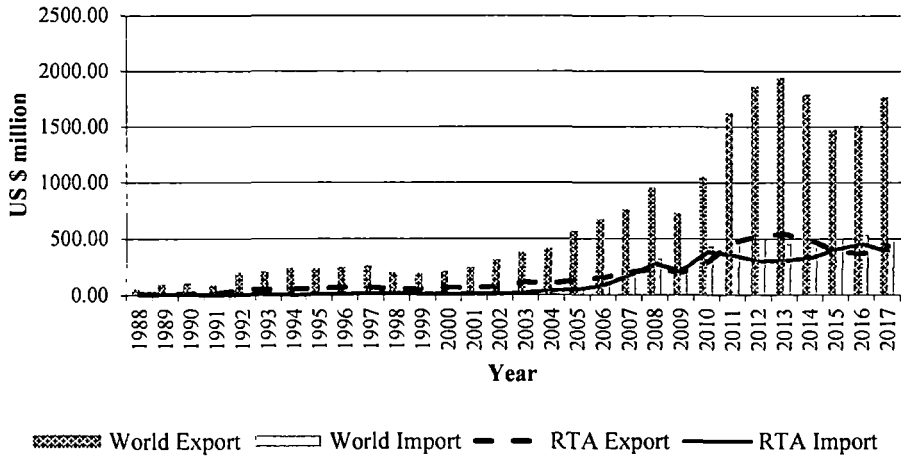
HS 4011		HS 4012		HS 4013	
Country	Share (per cent)	Country	Share (per cent)	Country	Share (per cent)
United States of America	14.94	Thailand	14.92	Egypt	8.76
Germany	6.87	United States of America	10.29	Nepal	8.06
France	3.71	UAE	6.23	Mexico	6.50
Bangladesh	3.53	Hong Kong	5.43	United Arab Emirates	5.40
Total	29.05	Total	36.87	Total	28.73

Source: Estimated from the trade data available from Export Import Databank, Department of Commerce, Government of India

7.1.2. Trends in import of tyres and allied rubber products

As in the case of exports, products under the heading HS 4011 was the major category of imports. The share of imports of products under HS 4011 from the member countries of India's trade agreements was 96.11 per cent and the same from other countries was 95.36 per cent during the year 2017. While the total import of the products under the tyre sector increased from US $ 4.34 million in 1988 to US $ 475.58 million in 2017 the value of import from the RTA members increased from US $ 3.32 million in 1988 to US $ 384.72 million during the same period. During the year 2017, in the total import of tyres and allied products, more than 80 percent was from the member countries of India's RTAs and only less than twenty percent was the share of import of the rest of the world. Moreover, the growth in import from RTA members during the period of analysis was (20.98 per cent) higher than that of imports from other countries (19.00 per cent) and that of exports (13.43 per cent) to RTA member countries. As a measure to curb the import of tyres into India, as per the notification no12/2015-2020 dated 12th June 2020, the government of India amended the import policy of all items under HS 401110, 401120, 401140 and HS 4011.50 of chapter 40 of ITC (HS) 2017 from "Free" to "Restricted". Fig 7.1 gives the trends in external trade in tyres and allied products.

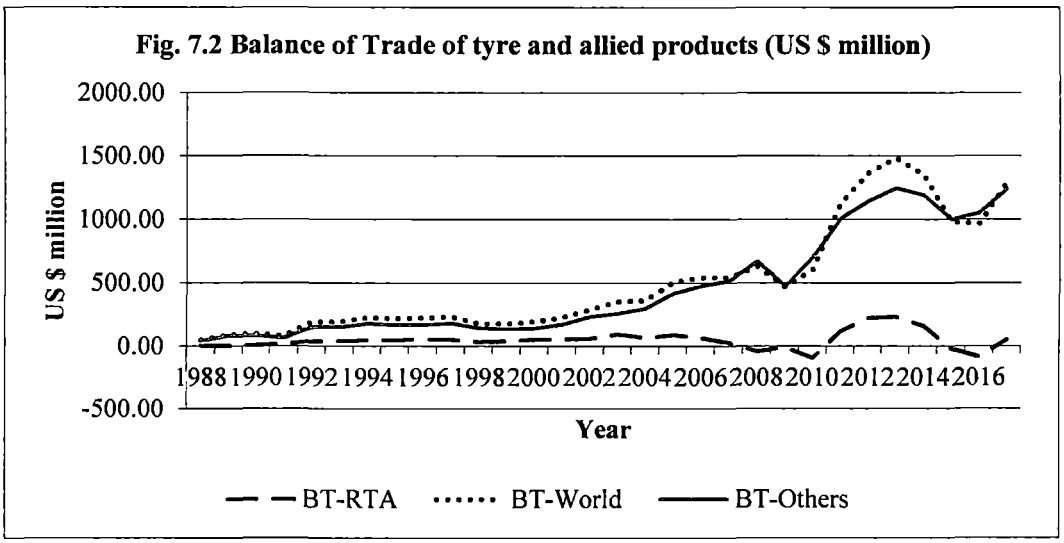
Fig. 7.1: India's external trade in tyre and allied products with RTA partners and with world (US $ million)



7.1.3. Tyres and allied rubber products and the balance of trade of India

Though during the last ten years the balance of trade of India with RTA members exhibited deficit intermittently, the higher positive balance of trade with other

countries helped the country to maintain positive balance of trade throughout the period of analysis in the case of tyres and allied products (Fig 7.2).



7.2. Tariff policy, structural breaks and the growth in import of tyres and allied rubber products

In the total import of tyres and allied products of India, RTAs has a share of more than 73 per cent during the thirty year period of analysis. Recent trends indicated that more than 80 percent of the import of tyres and allied products of India are from RTA partner countries. The tariff policy of the tyres and allied products indicated that among the PTAs, under APTA, all the subheadings of HS 4011 and under India Chile PTA, products under HS 401190 are given tariff concessions for imports. Under the FTAs, all subheadings of HS 4011 are classified for tariff elimination. While under India Malaysia CECA, all forms of HS 4011 are considered for tariff concession/elimination, under India Singapore CECA, except HS 40111010, HS 40112010 and HS 40115090, all other items are considered for tariff concession/elimination. Under India-Korea CEPA and India Japan CEPA except the nine types of tyres mentioned in Appendix H & K, all others are classified for duty concession/elimination. However, in the case of new pneumatic tyres, except under ISLFTA, post RTA growth exhibited lower growth in imports compared to the pre RTA phase.

The tariff policy for the used/retreaded tyres (HS 4012) under different PTAs of India shows that except for HS 4012.1300 under APTA, no products are earmarked for tariff concessions. Under ISLFTAs, six tariff subheadings and under SAFTA, three subheadings of non-LDCs are excluded from giving tariff concession (Appendix D&F1). Conversely, all items under the AIFTA are classified for tariff concession/elimination. Under the CECA between India and Singapore eight tariff lines (Appendix E) are classified as sensitive items and under India-Malaysia CECA import duty concessions are given for the items mentioned in Appendix J. Under the CEPA of India and Korea, except three tariff lines (Appendix H), and under India Japan CEPA, except five tariff lines (Appendix K), all other products are classified for tariff concession/elimination. However, except the import from AIFTA and under India-Malaysia CECA, post-RTA import growth exhibited lower rate of growth compared to the pre-RTA phase.

The tariff policy for the PTAs on inner tubes (HS 4013) indicated that while APTA provided tariff concession for import of HS 4013 other two PTAs kept the items outside the agreements. Conversely, under the FTAs, HS 4013 can be imported with concessional rate of duty/without duty. Under India-Singapore CECA (except HS 4013.2000) and India- Malaysia CECA, all the subheadings can be imported at zero rate of duty. Under both the CEPAs, HS 4013 can be imported with concessional duty. As a result, except the import from APTA and India Korea CEPA, import of HS 4013 from all other RTAs during the post-RTA phase exhibited higher growth compared to the pre-RTA phase. However, though the import of tyres and allied products of India from its RTA member countries grew at a faster rate than exports (21 per cent vs 13 per cent), except in the case of inner tubes, imports exhibited comparatively lower growth during the post-RTA phase (Table 7.2).

Table 7.2: Rate of Growth (per cent) of Import of Tyres and Allied Products of India during Pre and Post RTAs

Sl No.	Trade Agreements	4011		4012		4013	
		Pre RTA	Post RTA	Pre RTA	Post RTA	Pre RTA	Post RTA
1	Asia Pacific Trade Agreement	39.43	25.35	65.24	19.77	30.16	28.10
2	India-Sri Lanka	-5.19	38.89	---	34.37	---	27.58
3	India-Singapore	21.70	-3.28	8.75	-35.61	-3.31	10.04
4	SAFTA	51.75	-0.22	51.14	37.47	2.31	14.21
5	India-Bhutan	---	---	---	---	---	---
6	Chile-India	---	---	---	---	---	---
7	MERCOSUR	44.78	7.60	48.83	-22.54	-67.96	1.15
8	India-Nepal	-26.07	---	54.32	---	---	---
9	India-Korea	39.93	-20.41	5.78	-21.17	7.58	-19.77
10	ASEAN India	21.08	8.17	15.27	21.80	6.71	23.62
11	India-Malaysia	9.47	-24.00	-10.77	5.26	19.02	277.81
12	India-Japan	8.44	-8.84	8.64	-2.14	10.32	26.91

Source: Estimated from the trade data provided in wits.worldbank.org

However, the sector exhibited structural breaks in various time points during the thirty year period of the study. Different phases of import growth of tyres and allied products from the member countries of RTAs and the corresponding growth rates are given in Table 7.3. Prima facie, none of the observed shift in import of tyres and allied products of India are associated with the signing of India's trade agreement (though India entered into the trade agreement with Sri Lanka during the year 2000 the share of import from Sri Lanka was negligible). The major shifts in growth in imports of tyres and related products of India were coincided with (i) the reduction in general import duty due to the external trade liberalisation of the country in 1991 (Mohankumar and George, 2001; Mani, 1993) (ii) low momentum in the rate of growth of manufacturing activities during the period 1991 to till 1995-96 (Balakrishnan and Parameswaran, 2007) (iii) the higher domestic demand since the middle of 90s[24] (iv) the uptrend in world merchandise trade and GDP since 2009 and the co-movement of both (WTO, 2019). However, the disaggregate level analysis will provide the impact of tariff liberalisation under the RTAs on the import of tyres and allied products into the country. Detailed product heading-wise analysis are given in the following sections.

[24] Though the import policy of used /retreaded tyres into India was changed from "free" to "restricted" during the year 2006 the import of items under HS 4012 grew at a positive rate since 1994.

Table 7.3 Growth Rates (per cent) upto the Break Years of Tyre Sector Imports from the Member Countries of RTAs of India

4011		4012		4013		Total tyre sector	
Year	Growth	Year	Growth	Year	Growth	Year	Growth
1988-1993	13.84	1988-93	-19.93	1988-91	16.77	1988-95	10.13
1994-1997	52.72	1994-17	16.67	1992-98	10.95	1996-01	-9.57
1998-2001	-15.22			1999-03	-10.39	2002-08	67.80
2002-2008	69.67			2004-13	37.45	2009-17	5.66
2009-2017	5.51			2014-17	10.10		
Total	21.22	Total	15.93	Total	22.82	Total	20.98

Source: Estimated from the trade data provided in wits.worldbank.org

7.3 Trends in import of new pneumatic tyres of rubber (HS 4011)

There are seven tariff subheadings, viz., HS 4011 10, HS 4011 20, HS 4011 30, HS 4011 40, HS 4011 50, HS 4011 91 and HS 4011 99 under the heading HS 4011. Though there are eight subheadings under the revised version of HS, only seven subheadings given under the HS 1988 are considered for the analysis. Around 72 percent of the total import of products under HS 4011 was from China (39.52), Thailand (17.51 per cent), Japan (10.43 per cent) and Vietnam (4.08 per cent) during the last five years ending 2018-19. All the four countries has trade agreements with India and has concessions for import duty under the trade agreements. During the year 2017, 81.02 per cent of the import of HS 4011 was from RTA member countries. Also, during the period of study, the growth in import from RTA countries (21 per cent) was higher than that of the import from other countries (19 per cent).

The analysis at the disaggregate level indicate the prominence of RTA countries as a source of import of HS 4011. At the disaggregate level, till 2002, the import from RTAs was dominated by products under the sub-heading HS 4011.99, thereafter, the share of the product came down and the recent trends indicated that the products under HS 4011.10 and HS 4011.20 are dominated the import of new tyres from the RTAs. The import of HS 4011.10 and HS 4011.20 from the member countries of RTAs increased from US $ 0.24 million to US$153.45 million and US $0.79 million to US$128.87 million respectively. The rate of growth of import from RTA countries was higher for HS 4011.10 (35.10 per cent) and HS 4011.20 (34.16 per cent) compared to HS 4011.99 (10.27 per cent) during the period of analysis. However, in 2017, the share of import of HS 4011.10 and HS 4011.20 were 41.50 per cent and 34.85 per cent respectively and the share of HS 4011.99 came down from 60.32 per cent during the

year 1988 to 12.60 per cent in 2017. During the same period, the growth in import from other countries were 24.49 per cent, 35.26 per cent, 14.53 per cent respectively for subheadings HS 4011.10, HS 4011.20 and HS 4011.99 and the value of imports increased from US $0.03 million to US $ 51.18 million, US $0.01 million to US $11.75 million and US $0.36 million to US $13.71 million respectively from 1988 to 2017.

7.3.1 Tariff policy of HS 4011 under the RTAs

The new pneumatic tyres under the product heading HS 4011, are protected from duty reduction/elimination under the trade agreements of India with MERCOSUR and Chile (except HS 4011.90). The import tariff is completely eliminated for imports from Bhutan, Nepal and SAFTA. In the case of agreements with Malaysia and AIFTA, the concessions offered are same and there is no import duty for imports of products under HS 4011.30, HS 4011.70, HS 4011.80, HS 4011.90, and, the rate of import duty was fixed at 5 per cent for all other product subheadings. In the case of APTA, MOP was fixed at 14 per cent for new tyres and tubes listed in HS 4011[25]. The import duty for all subheadings of new tyres[26], will be eliminated under India-Japan CEPA at 11 equal instalment from the base rate of 10 per cent. In the tyre segment, all the type of new pneumatic tyres[27] can be imported into India without any duty under India Singapore CECA. Under ISLFTA, all the types of new pneumatic tyres are permitted duty free entry into India. Conversely, though there is no import duty for HS 4011.70, HS 4011.80 and HS 4011.90 under India-Korea CEPA, the import duty for HS 4011.30 was fixed at 5 per cent and there are no duty concessions for all other subheadings under this agreement (Table 7.4).

[25] except HS 4011.10, the MOP was 15 per cent
[26] except HS 4011.10, HS 4011.20, HS 4011.40 and HS 4011.50 which are excluded from any tariff concessions
[27] except HS 4011. 10, HS 4011.20 and HS 4011.50

Table 7.4. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4011

Trade Agreements	HS Code	4011 10	4011 20	4011 30	4011 40	4011 50	4011 70	4011 80	4011 90
	MFN 2018	10.0	12.5	3.0	10.0	10.0	10.0	10.0	10.0
APTA	MOP	15.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
ISLFTA	Tariff	0	0	0	0	0	0	0	0
Singapore	MOP	0#	0#	0	0	0#	0	0	0
SAFTA	Base rate (MFN 2006)	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff	0	0	0	0	0	0	0	0
Bhutan	Tariff	0	0	0	0	0	0	0	0
Chile	MOP	EXC	EXC	EXC	EXC	EXC	EXC	EXC	80.0
MERCOSUR	MOP	EXC	EXC	EXC	EXC	EXC	EXC	EXC	EXC
Nepal	Tariff	0	0	0	0	0	0	0	0
Korea	Base rate (MFN 2006)	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff	EXC	EXC	5.0	EXC	EXC	0	0	0
AIFTA	Base rate (MFN 2007)	10.0	10.0	3.0	10.0	10.0	10.0	10.0	10.0
	Tariff	5.0	5.0	0	5.0	5.0	0	0	0
Malaysia	Tariff	5.0	5.0	0	5.0	5.0	0	0	0
Japan	Base rate	---	---	3.0	---	---	10.0	10.0	10.0
	Category	NA	NA	B10	NA	NA	B10	B10	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of preference, (iii) EXC: Excluded, (iv) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free, (v) NA: Not applicable, (vi) #: At the eight-digit level HS 40111010: Radials tyres used on motor cars (incl station wagons & racing cars); HS 40112010: Radials tyres used on buses/lorries, and HS 40115090: Other tyres used on bicycles are in the Exclusion list

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

7.3.2 Effect of tariff policies of India under RTAs on HS 4011

The results of the gravity model estimation (Table 7.5) shows that the import is positively and significantly affected with the tariff concessions offered under the RTAs to major product sub headings such as HS 4011.10, HS 4011.20 and HS 4011.30. Moreover, the import of major product subheadings also exhibited positive and significant relationship with the GDP of the countries.

Table 7.5. Results of Gravity Model Estimation of Tariff Lines under HS 40.11
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob >chi2
1.	4011.10	Coeft	1.88*** (0.21)	0.66*** (0.12)	-1.26*** (0.42)	1.12*** (0.36)	-0.17 (0.40)	-0.93** (0.41)	-0.77 (0.58)	-53.11*** (5.89)	255.19	0.0000
		Z stat	9.05	5.39	-3.01	3.10	-0.43	-2.28	-1.32	-9.02		
2.	4011.20	Coeft	1.00*** (0.24)	0.55*** (0.17)	-0.71 (0.59)	1.89*** (0.43)	-0.97** (0.47)	0.01 (0.47)	1.62** (0.72)	-32.49*** (6.90)	124.49	0.0000
		Z stat	4.14	3.18	-1.20	4.35	-2.09	0.03	2.24	-4.72		
3.	4011.30	Coeft	0.52** (0.26)	0.82*** (0.20)	-1.79*** (0.65)	1.29*** (0.47)	-1.74 (1.22)	2.03* (1.21)	-3.12*** (0.96)	-17.60** (7.34)	53.47	0.0000
		Z stat	2.04	4.14	-2.74	2.70	-1.43	1.68	-3.25	-2.40		
4.	4011.40[a]	Coeft	0.63 (0.43)	0.21 (0.34)	0.25 (0.82)	1.06 (1.11)	-1.30* (0.74)	0.04 (0.49)	0.62 (1.27)	-22.41 (13.85)	19.80	0.0060
		Z stat	1.45	0.62	0.30	0.95	-1.76	0.08	0.48	-1.62		
5.	4011.50	Coeft	-1.04*** (0.30)	0.66** (0.31)	-1.99 (1.48)	0.90 (0.84)	-0.41 (0.58)	0.13 (0.50)	-0.44 (1.37)	29.31*** (10.20)	19.55	0.0066
		Z stat	-3.45	2.09	-1.34	1.08	-0.71	0.26	-0.32	2.87		
6.	4011.91	Coeft	1.08*** (0.24)	0.34 (0.30)	-0.83 (0.93)	-0.25 (0.65)	-0.93** (0.44)	-0.15 (0.62)	0.34 (1.34)	-28.85*** (8.99)	35.99	0.0000
		Z stat	4.42	1.15	-0.90	-0.39	-2.13	-0.24	0.25	-3.21		
7.	4011.99	Coeft	0.32 (0.25)	1.03 (0.14)	-1.05 (0.52)	-0.48 (0.57)	0.95 (0.65)	-0.85 (0.62)	0.31 (0.87)	-23.31 (7.98)	91.55	0.0000
		Z stat	1.27	7.42	-2.01	-0.83	1.48	-1.37	0.36	-2.92		

*** p<0.01, ** p<0.05, * p<0.10

Note: (i) HS 4011.10: New pneumatic tyres of a kind used on motor cars (including station wagons and racing cars); HS 4011.20: New pneumatic tyres used on buses/lorries; HS 4011.30 New pneumatic tyres of a kind used on aircraft; HS 4011.40: New pneumatic tyres of a kind used on motorcycles; HS 4011.50: New pneumatic tyres of a kind used on bicycles; HS 4011.91: Other having a "herring-bone"/similar tread; HS 4011.99: Other pneumatic tyres of rubber

(ii)The figures within the parentheses are standard errors

(iii) Coeft: Coefficient (iv) @: RE GLS Regression

7.4 Trends in import of retreaded or used pneumatic tyres of rubber, solid or cushion tyres, tyre treads and tyre flaps, of rubber (HS 4012)

There are three subheadings under HS 4012 viz, HS 4012.10, HS 4012.20 and HS 4012.90 based on the HSN 1988. Though there are five different subheadings under the revised versions of HS, for the present analysis the classifications given under the HS 1988 are considered. Thailand (29.58per cent), China (17.86 per cent), Hong Kong (15.37 per cent) and Japan (11.91per cent) are the major sources of import of products under the heading HS 4012 during the last five years ending in 2018-19. Around 74.72 per cent of the total import of HS 4012 was from these four countries. Among the four, Thailand and Japan has trade agreements with India and is eligible for concessional duty rates and has a combined share of more than 41 per cent of the total import of HS 4012 of India.

During the period of analysis, the import of products under HS 4012 from RTA countries grew at a higher rate (15.93 per cent) than the import from the rest of the world (12.53 per cent). The import from RTA countries grew from US$0.38 million in 1988 to US $8.97 million in 2017 and the import from other countries grew from US$0.09 million in 1988 to US $3.11 million in 2017. The share of import of HS 4012 from the member countries of RTAs (74.23 per cent) was much higher than that of the import from the rest of the world during the year 2017. Among the three subheadings in the total import of HS 4012 from the member countries of RTAs, the shares of HS 4012.10 and HS 4012.90 was 51.72 per cent and 39.96 per cent respectively during the year 2017. The import of HS 4012.10 and HS 4012.90 from the RTA countries grew at a rate of 15.54 per cent and 17.14 per cent respectively during the period of analysis. However, the share and rate of growth of import of the two product subheadings from the member countries of RTAs was much higher than that of the imports from countries outside the RTAs. During the year 2017, the value of import of HS 4012.10 and HS 4012.90 from the member countries of RTAs was US $ 4.64 million and US $ 3.58 million and the corresponding shares in the total import of these products subheadings were respectively 64.76 per cent 86.53 per cent.

7.4.1 Tariff policy of HS 4012 under the RTAs

The products under the retreaded tyre (HS 4012) segments are excluded from duty reduction/elimination under the trade agreements of India with MERCOSUR and Chile. Import tariff of India is completely eliminated for the products under HS 4012 under the trade agreements with Bhutan, Nepal and SAFTA. Except in the case of HS 401290, which is given duty free access to India, all other product subheadings are excluded from duty reduction/elimination under India-Singapore CECA. In the case of agreements with Malaysia and AIFTA, the concessions offered are same and is duty free for products under HS 4012.13. The rate of import duty under India-Malaysia CECA and AIFTA are fixed at 5 per cent for all other product subheadings under the heading HS 4012. The products of retreaded/used tyres under HS 4012 are excluded from any kind of tariff preference under APTA. The import duty for all items of retreaded/used tyres[28] will be eliminated under India-Japan CEPA at 11 equal instalments from the base rate of duty of 10 per cent. Except HS 4012.90, all other

[28] except HS 4012.11, HS 4012.12 and HS 4012.20 which are excluded from any tariff concessions

forms of retreaded/used tyres are excluded from any type of duty concession under India-Japan CEPA. Under ISLFTA, all the products under HS 4012 are excluded from any kind of tariff concession. Moreover, all types of products under HS 4012 (except HS 4012.20, which is excluded from tariff concessions) are permitted duty free entry into India under India Korea CEPA. Table 7.6 gives the details.

Table 7.6. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4012

Trade Agreements	HS Code	4012 11	4012 12	4012 13	4012 19	4012 20	4012 90
	MFN 2018	10.0	10.0	10.0	10.0	10.0	10.0
APTA	MOP	EXC	EXC	EXC	EXC	EXC	EXC
ISLFTA	Tariff	EXC	EXC	EXC	EXC	EXC	EXC
Singapore	MOP	EXC	EXC	EXC	EXC	EXC	100
SAFTA	Base rate (MFN 2006)	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff	0	0	0	0	0	0
Bhutan	Tariff	0	0	0	0	0	0
Chile	MOP	EXC	EXC	EXC	EXC	EXC	EXC
MERCOSUR	MOP	EXC	EXC	EXC	EXC	EXC	EXC
Nepal	Tariff	0	0	0	0	0	0
Korea	Base rate (MFN 2006)	12.5	12.5	12.5	12.5	12.5	12.5
	Tariff	0	0	0	0	EXC	0
AIFTA	Base rate (MFN 2007)	10.0	10.0	3.0	10.0	10.0	10.0
	Tariff	5.0	5.0	0	5.0	5.0	5.0
Malaysia	Tariff	5.0	5.0	0	5.0	5.0	5.0
Japan	Base rate	---	---	10.0	10.0	---	10.0
	Category	NA	NA	B10	B10	NA	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of Preference, (iii) EXC: Excluded, (iv) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free,(v) NA: Not applicable

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

7.4.2 Effect of tariff policies of India under the RTAs on HS 4012

The results of the gravity model estimation shows that, among the three product subheadings, only the tariff concessions offered to HS 4012.10 under the RTAs of India significantly influenced the growth in import of the product. In the case of HS 4012.90, GDPs of the countries and the distance between the countries also has positive and significant role in import than the tariff concessions offered (Table 7.7).

Table 7.7. Results of Gravity Model Estimation of Tariff Lines under HS 40.12
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP - India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2(7)	Prob>chi2
1	4012.10	Coeft	0.44 (0.29)	0.23 (0.26)	-0.81 (0.80)	2.25*** (0.72)	-0.22 (0.71)	-1.10 (0.72)	-0.96 (1.08)	-7.76 (7.64)	45.70	0.0000
		Z stat	1.52	0.87	-1.01	3.11	-0.31	-1.54	-0.89	-1.02		
2	4012.20	Coeft	-0.13 (0.30)	1.20*** (0.20)	-4.43*** (0.63)	0.47 (0.56)	-1.27** (0.58)	1.41** (1.41)	-1.57*** (0.58)	10.26 (8.22)	89.78	0.0000
		Z stat	-0.44	6.16	-7.08	0.84	-2.20	2.47	-2.71	1.25		
3	4012.90	Coeft	0.58*** (0.19)	0.50*** (0.13)	-0.91** (0.44)	-0.36 (0.46)	-0.24 (0.46)	0.11 (0.47)	1.33** (0.54)	-19.01** (5.50)	68.00	0.0000
		Z stat	3.12	3.96	-2.06	-0.78	-0.53	0.23	2.45	-3.47		

*** p<0.01, ** p<0.05, * p<0.10

Note: (i) HS 4012.10: Retreaded tyres; HS 4012.20: Used pneumatic tyres; HS 4012.90: Other solid/cushion tyres interchangeable tyre treads and tyre flaps of rubber

(ii)The figures within the parentheses are standard errors, (iii) Coeft: Coefficient

7.5 Trends in import of inner tubes (HS 4013)

The country imports 92.75 per cent of HS 4013 from Vietnam (31.96 per cent), China (30.50 per cent), Italy (28.63 per cent) and Thailand (1.66 per cent) during the last five years ending in 2018-19. Among the four countries Vietnam, China and Thailand has trade agreements with India and tariff concessions are available for imports from these countries. The share of import from the three countries together constituted 64.12 per cent of the total import of HS 4013. The rate of growth of import from RTA countries and the countries outside the trade agreements are comparable during the period under review. However, the value of import from RTA countries increased from US $0.01 million in 1988 to US $6.01 million during the year 2017 and from other countries the import increased from US $ 0.01 million to US$1.10 million.

HS 4013.10, HS 4013.20 and HS 4013.90 are the subheadings of HS 4013. In 2017, the share of HS 4013.10, HS 4013.20 and HS 4013.90 in the total import of HS 4013 was 35.18 per cent, 6.93 per cent and 57.90 per cent respectively. During the year 2017, in the total import of HS 4013, 84.48 per cent was the share of RTA member countries. In the value of imports from the member countries of RTAs around 65.95 per cent was the share of HS 4013.90. Conversely, in the total import of HS 4013 from other countries, 81.07 per cent was the share of HS 4013.10 during the year 2017. While the total value of import of HS 4013.90 increased from US$ 0.02 million in 1988 to US$4.12 million in 2017 the value of import from the member countries of RTAs increased from US$ 0.01 million to US$ 3.96 million.

7.5.1 Tariff policy of HS 4013 under the RTAs

All the three subheadings of inner tubes of tyres under the heading HS 4013 are protected by excluding from duty reduction/elimination under India MERCOSUR and India Chile trade agreements. Under the trade agreements with Bhutan, Nepal and SAFTA the import tariffs are completely eliminated. In the case of India-Malaysia CECA and AIFTA, the duty free import is permitted for products under HS 4013.10, HS 4013.20 and HS 4013.90. In the case of APTA, MOP was fixed at 14 per cent for all subheadings of HS 4013. The import duty for all items under HS 4013 will be eliminated under India Japan CEPA at 11 equal instalments from the base rate of duty of 10 per cent. Except the subheading HS 4013.20[29], others are exempted from import duty under India-Singapore CECA. Under ISLFTA and India Korea CEPA, all the three product subheadings of inner tubes are permitted for duty free import into India (Table 7.8).

Table 7.8. Tariff Concessions (per cent) Offered by India for Tariff Lines under HS 4013

Trade Agreements	HS Code	4013 10	4013 20	4013 90
	MFN 2018	10.0	10.0	10.0
APTA	MOP	14.0	14.0	14.0
ISLFTA	Tariff	0	0	0
Singapore	MOP	0	E	0
SAFTA	Base rate (MFN 2006)	12.5	12.5	12.5
	Tariff	0	0	0
Bhutan	Tariff	0	0	0
Chile	MOP	EXC	EXC	EXC
MERCOSUR	MOP	EXC	EXC	EXC
Nepal	Tariff	0	0	0
Korea	Base rate (MFN 2006)	12.5	12.5	12.5
	Tariff	0	0	0
AIFTA	Base rate (MFN 2007)	10.0	10.0	10.0
	Tariff	0	0	0
Malaysia	Tariff	0	0	0
Japan	Base rate	10.0	10.0	10.0
	Category	B10	B10	B10

Notes: (i) For product description see Appendix A (ii) MOP- Margin of preference, (iii) EXC and E: Excluded, (iv) B10: Customs duties shall be eliminated in 11 equal annual instalments from the base rate to free

Source: collected from various notifications of the government of India, available at www.commerce.gov.in

[29] which is classified as excluded item for any type of duty reduction/elimination

7.5.2 Effect of tariff policies of India under the RTAs on HS 4013

Though majority of the import of items under HS 4013 are from the member countries of RTAs, the results of the gravity model estimation shows that in no products cases growth in imports significantly related with the tariff concession given for member countries of RTAs. Table 7.9 gives the details.

Table 7.9. Results of Gravity Model Estimation of Tariff Lines under HS 40.13
Dependent variable is ln(import of India)

Sl No.	Product Code		lnGDP-India	lnGDP-Partner	lnDistance	Tariff concession	Common language	Common colony	Common border	Constant	Wald chi2 (7)	Prob>chi2
1	4013.10@	Coeft	0.63 (0.61)	0.58 (0.36)	-2.12** (0.92)	0.47 (0.86)	0.75 (0.70)	-1.72** (0.81)	1.67** (0.76)	-14.25 (15.72)	72.14	0.0000
		Z stat	1.04	1.61	-2.30	0.53	1.07	-2.12	2.20	-0.91		
2	4013.20	Coeft	-0.85* (0.44)	0.71** (0.31)	-2.78*** (1.00)	0.67 (0.64)	-1.74*** (0.63)	0.75 (0.73)	-1.26 (1.36)	29.05** (12.52)	23.45	0.0014
		Z stat	-1.95	2.26	-2.79	1.05	-2.75	1.03	-0.93	2.32		
3	4013.90	Coeft	0.07 (0.17)	0.88*** (0.12)	-1.22*** (0.45)	0.56 (0.35)	1.13** (0.46)	-0.98** (0.46)	0.57 (0.63)	-14.21*** (5.01)	87.69	0.0000
		Z stat	0.41	7.07	-2.73	1.58	2.46	-2.12	0.90	-2.84		

*** p<0.01, ** p<0.05, * p<0.10
Note: (i) The figures within the parentheses are standard errors (ii) Coeft: Coefficient (iii) @: RE GLS Regression

7.6 Summary

The analysis shows that more than 80 percent of the import of tyres and allied products are from member countries of RTAs of India. Compared to all other segments of Indian rubber industry the export performance is better in tyres and allied products sector and its balance of trade was positive in most of the periods. Though none of the shift observed in the growth in import is coincided with the signing of RTAs, the disaggregate level analysis shows that the tariff concession provided to different types of new tyres such as HS 4011.10, HS 4011.20, HS 4011.30 and to one item of the retreaded/used tyres category (HS 4012.10) are positively and significantly influenced the growth in import into India. Since Indian tyre manufactures are concentrating on the production of truck/bus tyres and car tyres, the import of the same under the RTAs needs to be addressed with appropriate policies.

CHAPTER 8
CONCLUSION AND POLICY SUGGESTION

The broad objective of study was to understand the effect of tariff liberalisation under the RTAs of India on the growth in import of rubber and rubber products of India. Therefore, the study analysed import tariff policies of rubber and rubber products at the disaggregate level under different RTAs and growth in import of various rubber and rubber products of India. By using gravity modelling, the product groups which exhibited import growth due to the liberalised tariff policies of India under the RTAs are identified. This chapter summarises major findings of the study.

The tariff policies of rubber and rubber products of India under the RTAs shows that the tariff concessions offered for different tariff lines are varied across RTAs based on the sensitivity and the threat of import into the country. The tariff policy of the rubber industry of India is a complex issue and an exception to the general norm of protecting the value added items with higher import duties and charging low import duties for raw materials. Due to the co-existence of millions of small and marginal rubber farmers and matured domestic rubber products manufacturing industry of the country, the policy of the government of India appeared to protect the weaker segments of the industry with higher external tariffs and the strongest in the value chain with lower import tariffs. Though it is resulted in inverted duty structure in the rubber industry, the manufacturing industry has been protected with various types WTO compatible trade policies[30]. However, the effect of tariff liberalisation under the RTAs on the import of products under raw materials, intermediate, non-tyre and tyre segments of India are different. A brief review on the segment wise analysis of impact of tariff policies under the RTAs on the import of rubber and rubber products of India is discussed below.

8.1 Raw material segment

The analysis of the tariff policies of different types of raw materials of rubber under the RTAs of India shows that when the country adopted a protective tariff policy for NR it was more liberal for fixing the tariffs of SR and RR. Except one tariff line, MFN duty of all other subheadings of NR was in the range of international tariff peaks.

[30]Notification. No. 01/2019-Cus.(CVD); dated 24.06.2019

The analysis of the tariff policies indicated that major forms of NR are not included in any of the RTAs of India with major global suppliers of NR are members. Therefore, the tariff liberalisation under the RTAs not directly impacted on the growth in import of NR from the member countries of India's RTAs. A review on the policy documents prepared by the Rubber Board on this matter indicated that the institutional support provided by the government of India through the Rubber Board and the policy recommendation provided by the organisation over the years (George et al, 2005; 2005a) successfully protected the farmers interests of the country by excluding NR from the coverage of most of the RTAs. Only from the member countries of APTA (Bangkok Agreement- signed during 1975) and from the LDCs of SAFTA, NR can be imported into India with concessional import duty. However, none of the countries in the agreements are major suppliers of NR. The results of the study also showed that none of the tariff subheadings of NR exhibited increase in imports due to the signing of RTAs. Moreover, the results of the analysis revealed that the import of NR is more influenced with the growth in economy of the country than any other variable considered for the analysis.

Conversely, the major portion of the consumption requirements of SR was met with imports and the tariff policies of SR under the RTAs of India was instrumental for increase in imports into India. In the case of SR, during the period of analysis, tariff concessions given only to four tariff lines (which constituted around 20 per cent of the total import of SR of India) are found to be the major factor determining the growth in import of those tariff lines into the country. This has also resulted in changes in the sources of imports of SR into the country. In the case of RR also, the tariff concession given is found to be the major factor behind the growth in imports into India. Historically, India is depending on the import of SR and is the major form of rubber imported into India. However, recent trends indicated that the composition of imports is changing and in value terms NR import is increased than that of SR.

In sum, increase in import of NR cannot be attributed to the RTAs of India. The analysis showed that in the case of five tariff lines under the raw material category of rubber viz., (i) HS 4002.41Chlorprene (Chlorobutadiene) rubber (CR): Latex, (ii)HS 4002.59-Acrylonitrile-butadiene rubber (NBR): Other, (iii)4002.70 -Ethylene-propylene-non-conjugated diene rubber (EPDM), (iv)HS 4002.80-Mixtures of any product of heading 40 01 with any product of this heading, and (v) HS 4003.00 Reclaimed rubber in primary forms or in plates, sheets or strip, the tariff concessions

are found to be one of the major factor for import growth into the country during the period of analysis. Though all the three headings of rubber raw materials viz., HS 4001 (NR), HS 4002 (SR) and HS 4003 (RR) showed shift in import growth in different time periods during the period of analysis none of the shift in import was associated with the signing of the trade agreements. In most of the products cases, the general economic growth or GDP growth was the reason for increases in import of rubber raw materials in the country than the tariff concessions offered under the RTAs.

Though the National Rubber Policy visualises to source at least 75 per cent of the NR domestically (GoI, 2019) the share of domestic production of NR in total consumption of the country showed declining trend (it came down from 89.34 per cent in 2009-10 to 53.72 per cent in 2018-19) (Rubber Board, 2013; 2019). Though the country's dependence on imported raw rubber, especially the dependence on NR, is increasing at a higher speed the farmers in the traditional rubber growing belts exhibited apathy to the farming activities due to various socio-economic factors. In the context of ageing plantations, low investment in both upstream and downstream R&D activities, low level of replanting activities in the traditional NR growing regions, sourcing at least 75 per cent of NR domestically will be difficult. The dependence of the raw materials will seriously affect the domestic and international competitiveness of Indian rubber industry in the long-run.

The import of NR during the last one decade shows many fold increase in value and quantity terms. However, since the focus of major NR exporting countries is shifting towards domestic value addition activities the export of NR from the producing countries is in the decreasing trends (Rubber Board, 2019; 2013; Joseph and Jacob, 2018). This will have serious implications in the entire value chain of the domestic rubber industry. In this context, organisations dealing with the matters should be empowered with more resources. Studies on resource exhaustion or the consequences of growing dependence on imported raw materials like NR should be initiated, as in the case of other countries, who depended on imports for raw material appointed commissions to study about the dependence on imported raw materials.

8.2 Intermediate rubber products

India has both export and import of intermediate rubber products. The country's balance of trade in intermediate rubber products was positive from 1995 to 2014. Only during the last three years the country imports more than that of its exports. The demand for intermediate rubber good is mostly emanating from rubber products manufacturing industries. A strong and growing finished rubber products manufacturing sector required raw materials as well as intermediate products to meet its increased demands.

However, throughout the period of analysis, the balance of trade in intermediate rubber goods with RTA members was negative. There are RTA specific studies which indicated India's trade engagements support imports of intermediate rubber goods into the country (Joseph and George, 2016; 2016a). Though majority of the import of intermediate rubber products was from the RTA members of India the rate of growth in import from the rest of the world was higher than that of the import from its RTA members. In the case of intermediate goods, the rate of growth in imports was lower than exports compared to raw material and finished rubber goods (Joseph and George, 2016a).The study shows the extent of India's import dependency on RTA member countries for intermediate rubber products.

Though the product headings in the intermediate rubber product sector exhibited various shifts in growth in import of India, it cannot be attributed to tariff concessions offered under the regional trade agreements. Only in the case of product subheadings (i) HS 4005.91-- Plates, sheets and strip:, and (ii) HS 4005.99 Other compounded unvulcanised rubber excl plats sheets, the tariff concessions given under the RTAs influenced significantly the growth in import into India. The analysis also indicate that (i) for items under HS 4004.00, the economic growth of the countries which is more influenced the growth in imports than other variables considered for the study, (ii) for all the product subheadings of HS 4005, the import is closely related to the GDP of India, (iii) except in the case HS 4005.10, GDP of the partner countries is also exhibited positive effect on imports (iv) though a positive relationship is found between tariff concession and import of HS 4005.10 the relationship was not significant (v) in the case of HS 4006.90, all the variables, except distance and GDP of the partner countries, exhibited insignificant relationship with the imports (vi) in contrast to the insignificant relationship between import and tariff concession, the relationship between import of HS 4007.00 and GDP of India, historical and geographical proximities are found to be

more closely associated. Distance also plays crucial role in determining the import of the product group, (vii) none of the product subheadings under HS 4008 exhibited significant relationship between import and tariff concession offered under the agreements. In sum, more than the tariff policy, the growth in economy (GDP) of India was the prime reason for higher import growth of items under the intermediate product groups from the country's RTA partners.

In order to achieve higher competitiveness in the value added finished rubber goods sector the country needs to strengthen its intermediate rubber goods industry. This is highly warranted in the context of highly localised production system of the entire value chain of the industries in major exporting nations (Dhar and Palit, 2020). Therefore, the country needs strong and vibrant intermediate rubber products industry to cater the needs of export oriented production of value-added rubber products.

8.3 Non-tyre rubber products

The analysis shows that one of the reason for growing negative balance of trade in non-tyre rubber products of India since the year 2000 is the higher level of inflow of non-tyre rubber products from the RTA member countries. The import of non-tyre rubber products from the RTA partners of India is growing at a higher rate than the import from the rest of the world. The role of RTAs as a source of import of non-tyre rubber products is evident from the higher import intensity (75.56per cent) in total merchandise trade of non-tyre rubber products of India with the partner countries of RTAs. It also showed that latex based products exhibited more shift in imports than the imports of dry rubber based non-tyre rubber products. Though in many product subheadings cases, major sources of import are the partner countries of India's RTAs only in limited cases tariff concession offered exhibited positive and significant relationship with imports. Among the product groups which showed import growth due to tariff liberalisation under the RTAs, the items under HS 4016.99 assumes importance as it covers several items produced by the micro, small and medium enterprises (MSMEs) in the country. However, the analysis shows that more than the tariff liberalisation under the RTAs the GDPs of the countries influence imports into the country.

Though the analysis showed shift in imports from the RTA countries in some of the years none of the shifts coincided with the signing of RTAs. As per the analysis, the product subheadings which exhibited strong relationship between the tariff concession

offered and import are (i) HS 4009.10 Tubes, pipes & hoses of vulcanised rubber not reinforced/otherwise combined with other materials without fittings, (ii) HS 4010.10 Conveyor/transmission belts/belting of trapezoidal cross-section (v-belts & v-belting), (iii) HS 4014.10Sheath contraceptives, and (iv) HS 4016.99Other: articles of vulcanised rubber excluding hard rubber nes. The four product subheadings of non-tyre products together accounted 33.91 per cent of the total import of non-tyre rubber products into the country during the year 2017.

The results of the analysis also showed (i) among the products under the heading HS 4009, the concessions offered only for the product subheading HS 4009.10 under the RTAs of India causes growth in imports into the country. For most of the subheadings under HS 4009, the GDPs played crucial role in determining the growth in imports into the country, (ii) the GDPs of the countries highly influenced the growth in import of product subheadings of HS 4010 into India. The tariff concessions offered only for the subheading HS 4010.10 affected significantly the growth in imports into India, (iii) among the product subheadings of HS 4014, only in the case of HS 4014.10 the tariff concessions given under the RTAs are positively and significantly affected the growth in import into India, (iv) in the case of products under HS 4015, imports of all the product subheadings exhibited positive but insignificant relationship with tariff concession offered. The GDP of India exhibited significant relationship with import of all the three subheadings of HS 4015 into India, (v) under the heading HS 4016 only the import of HS 4016.99 showed positive and significant relationship with tariff liberalisation. GDPs of India as well as its trading partners are also significantly influenced the imports into India, and (vi) Though the import of HS 4017.00 had no relationship with the tariff concessions offered under the RTAs the GDP of the countries as well as the distance exhibited significant relationship with the import into India.

The analysis also indicated that in many non-tyre rubber products cases the import was led by the general economic growth of the country. Hur (2003) argued that the formation of RTAs will promote relocation of the manufacturing units to the regional trade area's. However, in the case of non-tyre rubber products manufacturing units of India, considerable reduction in domestic manufacturing units observed during the period from 2009-10 (4528 units) to 2018-19 (3845 units) (Rubber Board, 2010;

2019). This indicated the crisis entangling the non-tyre rubber products sector of the country. Hence the suggestion for undertaking a techno-economic study to understand the current status and issues of the non-tyre sector (George, 2015) is highly relevant.

8.4 Tyres and allied products

In the case of tyres and allied rubber products, the analysis shows that more than 80 percent of the import are from member countries of RTAs of India. Compared to all other sectors the export performance of tyres and allied products are better and its balance of trade was positive in most of the years. None of the shifts observed in the growth in import is associated with the signing of RTAs. However, the disaggregate level analysis showed that the tariff concession provided to different types of new tyres and to one item of the retreaded/used tyres category are positively and significantly influenced the growth in import. The products which showed growth in import due to tariff concessions offered are (i) HS 4011.10, Of a kind used on motor cars (including station wagons and racing cars), (ii) HS 4011.20: -Of a kind used on buses or lorries (iii) HS 4011.30 Of a kind used on aircraft, and (iv) HS 4012.10 Retreaded tyres. Since Indian tyre manufacturers are concentrating on the production of truck/bus tyres and car tyres, the import of the same under the RTAs needs to be addressed with appropriate policies.

Though tariff escalations[31] are common in industrially advanced countries, in the value added rubber products sector of India almost all tariff lines including those in the intermediate rubber products category are fixed at 10 per cent (Appendix A). During the period of analysis, as in the case other sectors, the import of tyres and allied products from the member countries of RTAs exhibited a number of structural changes in imports. In all the three product headings cases, China and South Asian countries are the major sources of import. However, in the case of import of major subheadings of tyres of India, the tariff concession offered and growth in import are positively and significantly related with each other. The GDP is also found to be a major determinant of import of tyres and allied products into India.

The analysis of the import of tyres and allied products of India also indicated that (i) except during the initial years of the 21st decade (the entry of China in APTA was during the year 2001) the shift in import was not coincided with the signing up of

[31] Occurs if the tariff increases as a good becomes more processed.

any RTAs, and (ii) none of the tariff subheadings under HS 4013, the tariff concession given under the RTAs, induced the growth in imports significantly. Though imports of major forms of tyres are increased, the recent shift in tariff policy for the import of tyres from "Free" to "Restricted" may regulate the import into the country[32] both from RTA partners and from the rest of the world.

The automobile industry in China was heavily protected with higher tariffs and the higher tariffs were far more important than non-tariff measures in the protection of the automobile industry in China (Kai, 2012). However, the protection of the domestic automobile industry with the tariffs actually hindered the inflow of advanced technology into China and slowed the development of the domestic automobile industry in the country (Kai, 2012). In this context, the recent shift in import policy of tyres of India should be carefully monitored. The high levels of import protection could work against export promotion if it causes long- run domestic market power and makes domestic producers highly inefficient in production (Patibandla, 1996). Therefore, the period of protection of the tyre industry of India may be utilised as an opportunity for making the domestic industry more competitive.

8.5 Policy suggestions

In the context of the study, following suggestions for formulating appropriate trade/tariff policies for rubber and rubber products and strengthening the domestic rubber industry of the country are given.

1. Though the import of natural rubber is not affected with the tariff policies of India under the RTAs, in order to protect the domestic rubber production sector and to meet at least 75 per cent of the consumption requirement domestically, as visualised in National Rubber Policy (GoI, 2019), more investment in R&D and income support for replanting of NR in the traditional belts are highly necessary. Therefore, the formulation of tariff policies for the rubber raw materials under the RTAs in the future also should consider (i) the strategic importance of the raw materials, and (ii) the livelihood issues of more than one million smallholdings engaged in the production of NR in the country.
2. An assessment predicts huge gap in domestic production and consumption of NR in the country, if, proper replanting of the rubber plantation is not done in a mission mode approach (Jacob et al, 2018). In this context, an assessment of the

[32] Notification No.12/2015-2020-DGFT, dated: 12th June, 2020

dependence of import of NR should be done by the organisations concerned in an annual basis.

3. In order to compete with the highly localised value chains of the major exporting countries, the government should formulate suitable policies for the intermediate rubber product industries to ensure adequate supply to the finished rubber products industries located in the country for localisation of the value chain of the rubber industry of the country and to increase the competitiveness of the Indian rubber products manufacturing industry. In this respect, an assessment of the intermediate rubber products sector of the country is required.
4. Among the major latex based rubber products industries only the import of HS 4014.10 (contraceptives) is affected with the tariff concessions offered under the RTAs. However, since NR content in the items covered under the products is higher, efforts to be taken to reap the benefit arising from the locational advantages of latex based industries by adopting new technologies emerging in the field for strengthening the domestic manufacturing industries under the HS 4014.10.
5. Other major items of import affected with the tariff liberalisation under the RTAs are products under the subheading HS 4016.99. This product category contains large number of small scale rubber goods like rubber bands, rubber threads, rubber bushes, ear plug, etc which are produced in the MSME sector. Therefore, a detailed analysis of the status of the industry is required to protect the sector from the vagaries of international competition and to increase the product specific competitiveness of the rubber products.
6. Since the tariff concessions offered for major forms of tyres under the RTAs causes growth in imports into the country a detailed analysis on the strengths, weaknesses and competitiveness of different segments of Indian tyre industry is to be conducted for proper policy intervention.
7. In this context, the proposal for exploring the possibilities of evolving a consortium approach to establish regional technology clinics for testing the quality parameters of raw materials and finished products as well as to upgrade the technology of manufacturing (George, 2015) requires attention.
8. However, regular monitoring of the trends in all segments of the rubber industry by a centralised agency is highly essential in the context of (i) increasing import of rubber and rubber products under both RTA and non-RTA route, and (ii)

huge gap in the domestic production of the raw material required for the manufacturing industries. In this context, strengthening the Rubber Board with more portfolios such as monitoring of import and quality checking of the value added rubber products and more investment in the R&D of both upstream and downstream segments of the rubber industry are essential.

9. Around half of the RTAs notified under the WTO incorporated at least one provision specific to SME or MSMEs. The provisions (1) promoting cooperation on SMEs and (2) specifying that SMEs and/or programs supporting SMEs are not covered by the RTAs' obligations provisions are the two most common categories (Monteiro, 2016). Therefore, incorporating such provisions for trade agreements of India under negotiations is necessary to protect the SMEs in the rubber sector of the country.
10. However, the tariff policies of rubber and rubber products under the RTAs should be based on comprehensive analysis of strengths and weakness of each segment of the value chain of the industry.

Several studies indicated that preferential imports were the driving force behind the substantial increase in total imports from the RTA partners of India (Jha, 2011; Saraswat et al, 2018). Present study on rubber and rubber products of India indicated that though the duty reduction under the RTAs of India affected only 15 product subheadings of rubber industry in total, the import of these items constituted more than 25 per cent of the total import of rubber and rubber products of the country during the year 2019-20. Among different sectors of the rubber industry, tariff lines affected due to duty concessions constituted 12.28 per cent, 18.24 per cent, 71.94 per cent and 30.34 per cent of the import of raw materials, intermediate rubber products, tyres and allied products and non-tyre products respectively in to the country.

Though the present study identified the products which showed higher growth in imports due to tariff policies under the RTAs, an analysis of its impacts on the domestic rubber industry of the country was beyond the scope of the study. In order to formulate appropriate domestic and international trade policies for the rubber industry, in the future, studies on the impact of growth in import, of the fifteen product groups identified, on the domestic rubber industry of India are suggested.

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Appendix A

Tariff line-wise standard rate of duty of Chapter 40 (Rubber and articles thereof)

Tariff Item		Description of goods	Unit	Standard Rate of duty
(1)		(2)	(3)	(4)
4001		NATURAL RUBBER, BALATA, GUTTA-PERCHA, GUAYULE, CHICLE AND SIMILAR NATURAL GUMS, IN PRIMARY FORMS OR IN PLATES, SHEETS OR STRIP		
4001 10	-	*Natural rubber latex, whether or not pre-vulcanised :*		
4001 10 10	---	Prevulcanised	kg.	70%
4001 10 20	---	Other than prevulcanised	kg.	70%
	-	*Natural rubber in other forms :*		
4001 21 00	--	Smoked sheets	kg.	25%
4001 22 00	--	Technically specified natural rubber (TSNR)	kg.	25%
4001 29	--	*Other :*		
4001 29 10	---	Hevea	kg.	25%
4001 29 20	---	Pale crepe	kg.	25%
4001 29 30	---	Estate brown crepe	kg.	25%
4001 29 40	---	Oil extended natural rubber	kg.	25%
4001 29 90	---	Other	kg.	25%
4001 30 00	-	Balata, gutta-percha, guayule, chicle and similar natural gums	kg.	10%
4002		SYNTHETIC RUBBER AND FACTICE DERIVED FROM OILS, IN PRIMARY FORMS OR IN PLATES, SHEETS OR STRIP; MIXTURES OF ANY PRODUCT OF HEADING 4001 WITH ANY PRODUCT OF THIS HEADING, IN PRIMARY FORM S OR IN PLATES, SHEETS OR STRIP		
		- *Styrene-butadiene rubber (SBR); carboxylated styrene-butadiene rubber (XSBR) :*		
4002 11 00	--	Latex	kg.	10%
4002 19	--	*Other :*		
4002 19 10	---	Oil extended styrene butadiene rubber	kg.	10%
4002 19 20	---	Styrene butadiene rubber with styrene content exceeding 50%	kg.	10%
4002 19 30	---	Styrene butadiene styrene oil bound copolymer	kg.	10%
4002 19 90	---	Other	kg.	10%
4002 20 00	-	Butadiene rubber (BR)	kg.	10%
	-	*Isobutene-isoprene (butyl) rubber (IIR); halo-isobutene-isoprene rubber (CIIR or BIIR) :*		

4002 31 00	-- Isobutene-isoprene (butyl) rubber (IIR)	kg.	10%
4002 39 00	-- Other	kg.	10%
	- *Chlorprene (Chlorobutadiene) rubber (CR) :*		
4002 41 00	-- Latex	kg.	10%
4002 49 00	-- Other	kg.	10%
	- *Acrylonitrile-butadiene rubber (NBR) :*		
4002 51 00	-- Latex	kg.	10%
4002 59 00	-- Other	kg.	10%
4002 60 00	- Isoprene rubber (IR)	kg.	10%
4002 70 00	- Ethylene-propylene-non-conjugated diene rubber (EPDM)	kg.	10%
4002 80	- *Mixtures of any product of heading 40 01 with any product of this heading :*		
4002 80 10	--- Latex	kg.	10%
4002 80 20	--- Chemically modified form of natural rubber including graft rubber	kg.	10%
4002 80 90	--- Other	kg.	10%
	- *Other :*		
4002 91 00	-- Latex	kg.	10%
4002 99	-- *Other :*		
4002 99 10	--- Factice (rubber substitute derived from oil)	kg.	10%
4002 99 20	--- Tread rubber compound, cushion compound, cushion gum and tread gum for resoling or repairing or retreading rubber tyres	kg.	10%
4002 99 90	--- Other	kg.	10%
4003 00 00	RECLAIMED RUB BER IN PRIMARY FORMS OR IN PLATES, SHEETS OR STRIP	kg.	10%
4004 00 00	WASTE, PARINGS AND SCRAP OF RUBBER (OTHER THAN HARD RUBBER) AND POWDERS AND GRANULES OBTAINED THEREF ROM	kg.	10%
4005	COM POUNDED RUBBER, UNVULCANISED, IN PRIMARY FORMS OR IN PLATES, SHEETS OR STRIP		
4005 10 00	- Compounded with carbon black or silica	kg.	10%
4005 20	- *Solutions; dispersions other than those of sub-heading 4005 10 :*		
4005 20 10	--- Can sealing compound	kg.	10%
4005 20 90	--- Other	kg.	10%
	- *Other :*		
4005 91	-- *Plates, sheets and strip:*		
4005 91 10	--- Hospital sheeting	kg.	10%
4005 91 90	--- Other	kg.	10%
4005 99	-- *Other :*		
4005 99 10	--- Granules of unvulcanised natural or synthetic rubber, compounded, ready for	kg.	10%

		vulcanisation		
4005 99 90	---	Other	kg.	10%
		OTHER FORMS (FOR EXAMPLE, RODS, TUBES AND PROF ILE SHAPES) AND ARTICLES(FOR EXAMPLE, DISCS AND		
4006		RINGS), OF UNVULCANISED RUBBER		
4006 10 00	-	"Camel-back" strips for retreading rubber tyres	kg.	10%
4006 90	-	*Other :*		
4006 90 10	---	Thread, not covered	kg.	10%
4006 90 90	---	Other	kg.	10%
		VULCANISED RUBBER THREAD AND		
4007		CORD		
4007 00	-	*Vulcanised rubber thread and cord:*		
4007 00 10	---	Thread, not covered	kg.	10%
4007 00 20	---	Cord, not covered	kg.	10%
4007 00 90	---	Other	kg.	10%
4008		PLATES, SHEETS, STRIP, RODS AND PROFILE SHAPES, OF VULCANISED RUBBER OTHER THAN HARD RUBBER		
	-	*Of cellular rubber :*		
4008 11	--	*Plates, sheets and strip :*		
4008 11 10	---	Of micro-cellular rubber	kg.	10%
4008 11 90	---	Other	kg.	10%
4008 19	--	*Other :*		
4008 19 10	---	Blocks of micro-cellular rubber but not of latex foam sponge, used in the manufacture of soles, heels or soles and heels combined, for footwear	kg.	10%
4008 19 90	---	Other	kg.	10%
	-	*Of non-cellular rubber:*		
4008 21	--	*Plates, sheets and strip :*		
4008 21 10	---	Used in the manufacture of soles, heels or soles and heels combined, for footwear	kg.	10%
4008 21 20	---	For resoling or repairing or retreading rubber tyres	kg.	10%
4008 21 90	---	Other	kg.	10%
4008 29	--	*Other :*		
4008 29 10	---	Rubber sheets and resin rubber sheets for soles and heels	kg.	10%
4008 29 20	---	Blocks used in the manufacture of soles, heels or soles and heels combined, for footwear	kg.	10%
4008 29 30	---	Latex foam sponge	kg.	10%
4008 29 40	---	Tread rubber and tread packing strip for resoling or repairing or retreading	kg.	10%

		rubber tyres		
4008 29 90	---	Other	kg.	10%
4009		TUB ES, PIPES AND HOSES, OF VULCANISED RUBBER OTHER THAN HARD RUBBER, WITH OR WITHOUT THEIR FITTINGS (FOR EXAMPLE, JOINTS, ELBOWS, FLANGES)		
	-	*Not reinforced or otherwise combined with other materials :*		
4009 11 00	--	Without fittings	kg.	10%
4009 12 00	--	With fittings	kg.	10%
	-	*Reinforced or otherwise combined only with metal:*		
4009 21 00	--	Without fittings	kg.	10%
4009 22 00	--	With fittings	kg.	10%
	-	*Reinforced or otherwise combined only with textile materials :*		
4009 31 00	--	Without fittings	kg.	10%
4009 32 00	--	With fittings	kg.	10%
	-	*Reinforced or otherwise combined with other materials :*		
4009 41 00	--	Without fittings	kg.	10%
4009 42 00	--	With fittings	kg.	10%
4010		CONVEYOR OR TRANSMISSION BELTS OR BELTING OF VULCANISED RUBBER		
	-	*Conveyor belts or belting :*		
4010 11	--	*Reinforced only with metal :*		
4010 11 10	---	Where the rubber compound content is less than 25% by weight	kg.	10%
4010 11 90	---	Other	kg.	10%
4010 12	--	*Reinforced only with textile materials :*		
4010 12 10	---	Where the rubber compound content is less than 25% by weight	kg.	10%
4010 12 90	---	Other	kg.	10%
4010 19	--	*Other :*		
4010 19 10	---	Where the rubber compound content is less than 25% by weight	kg.	10%
4010 19 90	---	Other	kg.	10%
	-	*Transmission belts or belting :*		
4010 31	--	*Endless transmission belts of trapezoidal cross-section (V-belts), V-ribbed, of an outside circumference exceeding 180 cm but not exceeding 240 cm :*		
4010 31 10	---	Where the rubber compound content is less than 25% by weight	kg.	10%
4010 31 90	---	Other	kg.	10%
4010 32	--	*Endless transmission belts of trapezoidal cross-*		

		section (V-belts), other than V-ribbed, of an outside circumference exceeding 60 cm but not exceeding 180 cm :		
4010 32 10	---	Where the rubber compound content is less than 25% by weight	kg.	10%
4010 32 90	---	Other	kg.	10%
4010 33	--	*Endless transmission belts of trapezoidal cross-section (V-belts), V-ribbed, of an outside circumference exceeding 60 cm but not exceeding 180 cm :*		
4010 33 10	---	Where the rubber compound content is less than 25% by weight	kg.	10%
4010 33 90	---	Other	kg.	10%
4010 34	--	*Endless transmission belts of trapezoidal cross-section (V-belts), other than V-ribbed, of an outside circumference exceeding 180 cm but not exceeding 240 cm :*		
4010 34 10	---	Where the rubber compound content is less than 25% by weight	kg.	10%
4010 34 90	---	Other	kg.	10%
4010 35	--	*Endless synchronous belts of an outside circumference exceeding 60 cm but not exceeding 150 cm :*		
4010 35 10	---	Where the rubber compound content is less than 25% by weight	kg.	10%
4010 35 90	---	Other	kg.	10%
4010 36	--	*Endless synchronous belts of an outside circumference exceeding 150 cm but not exceeding 198 cm :*		
4010 36 10	---	Where the rubber compound content is less than 25% by weight	kg.	10%
4010 36 90	---	Other	kg.	10%
4010 39	--	*Other :*		
	---	*Where the rubber compound content is less than 25% by weight :*		
4010 39 11	----	Endless flat belt	kg.	10%
4010 39 12	----	Ply belting	kg.	10%
4010 39 19	----	Other	kg.	10%
	---	*Other:*		
4010 39 91	----	Endless flat belt	kg.	10%
4010 39 92	----	Ply belting	kg.	10%
4010 39 99	----	Other	kg.	10%
4011		NEW PNEUMATIC TYRES, OF RUBBER		
4011 10	-	*Of a kind used on motor cars (including station wagons and racing cars) :*		
4011 10 10	---	Radials	u	15%
4011 10 90	---	Other	u	10%
4011 20	-	*Of a kind used on buses or lorries :*		
4011 20 10	---	Radials	u	15%

4011 20 90	--- Other	u	10%
4011 30 00	- Of a kind used on aircraft	u	3%
4011 40	- *Of a kind used on motor cycles :*		
4011 40 10	--- For motor cycles	u	10%
4011 40 20	--- For motor scooters	u	10%
4011 40 90	--- Other	u	10%
4011 50	- *Of a kind used on bicycles :*		
4011 50 10	--- Multi-cellular polyurethane (MCP) tubeless tyres	u	10%
4011 50 90	--- Other	u	10%
4011 70 00	- Of a kind used on agricultural or forestry vehicles and machines	u	10%
4011 80 00	- Of a kind used on construction, mining or industrial handling vehicles and machines	u	10%
4011 90 00	- Other	u	10%
4012	RETREADED OR USED PNEUMATIC TYRES OF RUBBER, SOLID OR CUSHION TYRES, TYRE TREADS AND TYRE FLAPS, OF RUBBER		
	- *Retreaded tyres :*		
4012 11 00	-- Of a kind used on motor cars (including station wagons and racing cars)	u	10%
4012 12 00	-- Of a kind used on buses or lorries	u	10%
4012 13 00	-- Of a kind used on aircraft	u	10%
4012 19	-- *Other :*		
4012 19 10	--- For two wheelers	u	10%
4012 19 90	--- Other	u	10%
4012 20	- *Used pneumatic tyres :*		
4012 20 10	--- For buses, lorries and earth moving equipments including light commercial vehicles	u	10%
4012 20 20	--- For passenger automobile vehicles, including two wheelers, three wheelers and personal type vehicles	u	10%
4012 20 90	--- Other	u	10%
4012 90	- *Other :*		
4012 90 10	--- Solid rubber tyres for motor vehicles	kg.	10%
4012 90 20	--- Solid rubber tyres for other vehicles	kg.	10%
4012 90 30	--- Tyres with metal framework	kg.	10%
	--- *Tyre flaps :*		
4012 90 41	---- Of a kind used in two-wheeled and three-wheeled motor vehicles	kg.	10%
4012 90 49	---- Other	kg.	10%
4012 90 50	--- Tyre treads, interchangeable	kg.	10%
4012 90 90	--- Other	kg.	10%
4013	INNER TUBES, OF RUBBER		

4013 10	- *Of a kind used on motor cars (including station wagons and racing cars), buses or lorries :*		
4013 10 10	--- For motor cars	u	10%
4013 10 20	--- For lorries and buses	u	10%
4013 20 00	- Of a kind used on bicycles	u	10%
4013 90	- *Other :*		
4013 90 10	--- For aircraft	u	10%
4013 90 20	--- For motor cycle	u	10%
4013 90 30	--- For off the road vehicles, not elsewhere specified or included	u	10%
	-- *For tractors :*		
4013 90 41	---- Rear tyres	u	10%
4013 90 49	---- Other	u	10%
4013 90 50	--- Of a kind used in tyres of cycle rickshaws and three-wheeled powered cycle-rickshaws	u	10%
4013 90 90	--- Other	u	10%
4014	HYGIENIC OR P HARMACEUTICAL ARTICLES (INCLUDING TEATS), OF VULCANISED RUBBER OTHER THAN HARD RUBBER, WITH OR WITHOUT FITTINGS OF HARD RUBBER		
4014 10	- *Sheath contraceptives :*		
4014 10 10	--- Rubber contraceptives, male (condoms)	kg.	10%
4014 10 20	--- Rubber contraceptives, female (diaphragms), such as cervical caps	kg.	10%
4014 90	- *Other :*		
4014 90 10	--- Hot water bottles	kg.	10%
4014 90 20	--- Ice bags	kg.	10%
4014 90 30	--- Feeding bottle nipples	kg.	10%
4014 90 90	--- Other	kg.	10%
4015	ARTICLES OF APPAREL AND CLOTHING ACCESSORIES (INCLUDING GLOVES, MITTENS AND MITTS) FOR ALL PURPOSES, OF VULCANISED RUBBER OTHER THAN HARD RUBBER		
	- *Gloves, mittens and mitts:*		
4015 11 00	-- Surgical	pa	10%
4015 19 00	-- Other	pa	10%
4015 90	- *Other :*		
4015 90 10	--- Rubber apron	pa	10%
4015 90 20	--- Labels	kg.	10%
4015 90 30	--- Industrial gloves	pa	10%
	--- *Other:*		
4015 90 91	--- Diving suits	kg.	10%
4015 90 99	--- Other	kg.	10%

4016	OTHER ARTICLES OF VULCANISED RUBB ER OTHER THAN HARD RUBBER		
4016 10 00	- Of cellular rubber	kg.	10%
	- *Other :*		
4016 91 00	-- Floor coverings and mats	kg.	10%
4016 92 00	-- Erasers	kg.	10%
4016 93	-- *Gaskets, washers and other seals :*		
4016 93 10	--- Patches for puncture repair of self-vulcanising rubber or a rubber backing	kg.	10%
4016 93 20	--- Rubber rings (O-ring)	kg.	10%
4016 93 30	--- Rubber seals (Oil seals and the like)	kg.	10%
4016 93 40	--- Gaskets	kg.	10%
4016 93 50	--- Washers	kg.	10%
4016 93 60	--- Plugs	kg.	10%
4016 93 90	--- Other	kg.	10%
4016 94 00	-- Boat or dock fenders, whether or not inflatable	kg.	10%
4016 95	-- *Other inflatable articles:*		
4016 95 10	--- Air mattresses	kg.	10%
4016 95 90	--- Other	kg.	20%
4016 99	-- *Other :*		
4016 99 10	--- Rubber cots for textile industry	kg.	10%
4016 99 20	--- Rubber bands	kg.	10%
4016 99 30	--- Rubber threads	kg.	10%
4016 99 40	--- Rubber blankets	kg.	10%
4016 99 50	--- Rubber cushions	kg.	10%
4016 99 60	--- Rubber bushes	kg.	10%
4016 99 70	--- Ear plug	kg.	10%
4016 99 80	--- Stoppers	kg.	10%
4016 99 90	--- The following goods for use in manufacture of cellular mobile phones, namely :- (i) Microphone Rubber Case (ii) Sensor Rubber Case/Sealing Gasket including sealing gaskets/cases from Rubbers like SBR, EPDM, CR, CS, Silicone and all other individual rubbers or combination / combination of rubbers	kg.	10%
4 01 7	HARD RUB BER (FOR EXAMPLE, EB ONITE) IN ALL FORM S, INCLUDING WASTE AND SCRAP; ARTICLES OF HARD RUBBER		
4017 00	- *Hard rubber (for example, ebonite) in all forms, including waste and scrap; articles of hard rubber:*		
4017 00 10	--- Plates, sheets, rods and tubes of ebonite and vulcanite	kg.	10%
4017 00 20	--- Scrap, waste and powder of hardened rubber (ebonite and vulcanite)	kg.	10%

4017 00 30	--- Printers' rollers	kg.	10%
4017 00 40	--- Textile rollers	kg.	10%
4017 00 50	--- Typewriters and cyclostyling rollers	kg.	10%
4017 00 90	--- Other	kg.	10%

Source: www.cbec.gov.in (duty as on 30.06.2020)

Appendix B

Concordance table of different versions of HS

Correlation between HS 1988/92 and HS 1996		**Correlation between HS 1996 and HS 2002**		**Correlation between HS 2012 and HS 2017**	
HS 1988/92 version	**HS 1996 version**	**HS 1996**	**HS 2002**	**HS 2012**	**HS 2017**
401091	401011	400910	400911	401161	401170
	401012	400920	400921	401192	
	401013	400930	400931	401162	401180
	401023	400940	400941	401163	
	401024	400950	400912	401193	
401099	401019		400922	401194	
	401029		400932	401169	401190
401010	401021		400942	401199	
	401022	401021	401031		
			401032		
		401022	401033		
			401034		
		401023	401035		
		401024	401036		
		401029	401039		
		401191	401161		
			401162		
			401163		
			401169		
		401199	401192		

			401193		
			401194		
			401199		
		401210	401211		
			401212		
			401213		
			401219		

Source: WCO, 2016 available at www.wcoomd.org

Appendix C

Extent of tariff concession offered under APTA

Sl No.	Chapter, Heading No., Sub-Heading No., or tariff item	Description of Goods	Extent of tariff concession (percentage of applied rate of duty)
1	4001 10	All goods	43
2	4001 21 00,4001 22 00	All goods	20
3	4001 29	All goods	20
4	4002 11 00	All goods	15
5	4002 19(except 4002 19 90)	All goods	15
6	4002 2000	All goods	15
7	4009 2200,400932 00, 400942 00	All goods	15
8	4010 11,4010 12	All goods	15
9	4011 10	All goods	15
10	4011(except 4011 10)	All goods	14
11	4012 13 00	All goods	40
12	4013	All goods	14
13	4015	All goods	30
14	4016 1000	All goods	15
15	401691 00,401692 00,401694 00	All goods	30
16	4016 95, 4016 99	All goods	30
17	4017	All goods	30

Source: Notification No. 50/2018–Customs dated 30th June, 2018 available at cbic.gov.in

Appendix D

Negative list of India for India-Sri Lanka FTA

Sl No.	HS Code	Product Description
1	400110	Natural rubber... - centrifuged rubber
2	400121	Smoked sheets
3	400122	Technically specified natural rubber, in primary forms or in plates, etc
4	400129	Other - Sole crepe rubber, pale crepe, brown crepe, scrap crepe
5	400130	Balata, gutta-percha, guayule, chicle and similar natural gems.
6	400300	Reclaimed rubber in primary forms or in plates, sheets or strip
7	400400	Waste, ... - scrap of unhardened rubber obtained from rejected or wornout tyres & cuttin
8	400510	Compound with carbon black or silica - With carbon black
9	400520	Rubber solutions; dispersions, unvulcanized, nes
10	400591	Plates, sheets and strip of unvulcanized, compounded rubber, nes
11	400599	Compounded rubber, unvulcanized, in primary forms
12	400610	Camel-back strips for retreading rubber tyres
13	400690	Other forms and articles of unvulcanized rubber, nes
14	400700	Vulcanized rubber thread and cord
15	400811	Plates, sheets and strip of cellular vulcanized rubber
16	400819	Rods and profile shapes of cellular vulcanized rubber, nes
17	400821	Plates, sheets and strip of non-cellular, vulcanized rubber(excl. hard)
18	400829	Rods and profile shapes of non-cellular, vulcanized rubber (excl. hard)
19	401211	Retreaded tyres of a kind used on motor cars
20	401212	Retreaded tyres of a kind used on busses / lorries
21	401213	Retreaded tyres of a kind used on air craft
22	401219	Other
23	401220	Used new pneumatic tyres
24	401290	Solid tyres
25	401610	Articles of vulcanized rubber of cellular rubber
26	401691	Floor coverings and mats of vulcanized rubber, non-cellular
27	401692	Erasers, of vulcanized rubber
28	401693	Gaskets,...-of textile machinery falling under HS 84.44, 84.45,84.46, 84.47, & 84.48
29	401694	Boat or dock fenders, of vulcanized rubber
30	401695	Inflatable articles, of vulcanized rubber, nes
31	401699	Being parts of textile machinery falling under headings 84.44,84.45,84.46,84.47 & 84.48
32	401700	Hard rubber (eg. ebonite) in all forms; articles of hard rubber

Source:
http://www.doc.gov.lk/images/pdf/our_services/isfta/annex_di_indias_negative_list_under_isfta.pdf

Appendix E

Items excluded from tariff concession under India-Singapore CECA

Sl No.	HS Code	Description
1	40011010	Prevulcanised natrl rubr latex
2	40011020	Natrl rubr latex not prevulcanised
3	40012100	Natrl rubr in smkd sheets
4	40012200	Technically spcfd natrl rubr(tsnr)
5	40012910	Natural rubber in hevea
6	40012920	Natural rubber in pale crepe
7	40012930	Natural rubber in estate brown crepe
8	40012940	On extended natural rubber
9	40012990	Other natrl rubbr non-latex
10	40013000	Balta gutta-percha etc & smlr natrl gums
11	40021910	Oil extended styrene butadiene rubber
12	40021920	Styrene butadiene rubber wth styrene content of over 50 percent
13	40021930	Styrene butadiene styrede oil bound copolymer
14	40021990	Others
15	40022000	Butadiene rubber (br)
16	40023100	Isobutene-isoprene(butyl) rubber (iir)
17	40023900	Halo-isobutene-isoprene rubr (ciir/biir)
18	40024100	Latex,chloroprene rubr
19	40024900	Othr chloroprene(chlorobutadiene) rubr(cr)
20	40025100	Acrylonitrile-butadine rubr latex
21	40025900	Othr acrylonitrile-butadiene rubr (nbr)
22	40026000	Isoprene rubber
23	40028010	Latex
24	40028020	Chemly modified form of natural rubber inc graft rubber
25	40028090	Other form of mxtures of natural rubber
26	40029100	Othr ruber latex
27	40029910	Factice (rubr substitute drvd from oil)
28	40029920	Tread rubr com,cushion com,cushion gum/ tread gum for resol/repai/retrea rubr tyre
29	40029990	Synthetic rubber syntax,not nes.
30	40030000	Reclaimed rubr in prmry forms or in plates sheets or strip
31	40040000	Waste,parings & scrap of rubr(besides hardrubr) & pwdr 9 grnls obtained therefrom
32	40051000	Rubr compounded wth crbn blacks/silica
33	40052010	Can sealing compound
34	40052090	Others
35	40059110	hospital sheeting
36	40059190	Other plates sheets & strip
37	40059910	Grnls of unvulcnsd natrl/synthtc rubr cmpnded ready for vulcnstn (excl raw rubr) 204

38	40059990	Others
39	40061000	Camel-black"strps fr retreading rubr tyrs"
40	40069010	Thread of unvulcnse rubr,not covered elsewhere
41	40069090	Others
42	40070010	Thread of vulense rubr,not covrd elsewhere
43	40070020	Cord of vulcnse rubr, not covred elsewhere
44	40081110	Plts,shts strp of micro-cellular rubr
45	40081190	Plts,shts,strp of other cellular rubr
46	40081910	Block of micro-cellu rubr not of latax foam sponge used in manuf of soles/leels/ combined for footwear
47	40081990	Other form of cellular rubr
48	40082110	Plts,shts,strips of non-cellular rubr usedin manuf of sole/heel/combined for foot wear
49	40082120	Plts,shts,strips of non-cellular rubr for resoling/repairing/retreading rubr tyres
50	40082190	Other form of plts,shts,strips of non- cellular rubr
51	40082910	Rubr sheets/resin rubr sheet for sole/heel of others form of non-cellular rubr
52	40082920	Block used in manuf of sole/heel/combined for footwear of other non-cellular rubr
53	40082930	Latex foam sponge of other non-cellular rubr
54	40082940	Treadrubr/packing strip for resoling/ repairing/retreading rubr tyres of other non-cellular rubr
55	40082990	Other form of non/cellular rubr
56	40091100	tubes,pipes & hoses of vulcnsd rubr not reinforced/othrwse combined wth othr materials without fittings
57	40093100	Tubes, pipes & hoses of vulcnsd rubr reinforced/othrwse cmbnd only wth textile materials wthout fittings
58	40094200	Tubes,pipes,&hoses of vulcnsd rubr reinforced otherwse combined with other matarials with fittings
59	40103410	Endless trnsmsn blt/bltng of v-blt/other than v-ribbed of circum betwn 180 cm & 240cm where ruby compd less than 25% by wt.
60	40103490	Endless trnsmsn blt/bltngs of v-blt other than v-ribbed of circum betwn 180 cm & 240cm where ruby compd more than 25% by wt.
61	40111010	Radials tyres used on motor cars (incl station wagons & racing cars)
62	40112010	Radials tyres used on buses/lorries
63	40115090	Other tyres used on bicycles
64	40121100	Retreaded tyre used on motor cars(incl statation wagon/racing cars)
65	40121200	Retreaded tyre used 0on buses/lorries
66	40121300	Retreaded tyre used on aircrafts
67	40121910	Retreaded tyre used for two wheelers
68	40121990	Retreaded tyre used in vehicle other than two wheeler/motor car/bus/lorry/aircraft

69	40122010	Used pnmtc tyres for buses/lorries/earth moving equipment incl light commrcl vehicl
70	40122020	Used pnmtc tyres for pasenger auto vehicleincl two/three wheeler & personal vehicles
71	40122090	Used pnmtc tyres for other vehicles.
72	40132000	Inner tubes of rubber used on bicycles
73	40161000	Othr artcls of cellular rubber
74	40169100	Floor coverings and mats 205
75	40169200	Erasers
76	40169310	Patches fr puncture repair of self-vulcnsng rubr/a rubr lacking
77	40169320	Rubber ring(o-ring)
78	40169330	Rubber seals(oil seals,etc)
79	40169340	Gaskets
80	40169350	Washers
81	40169360	Plugs
82	40169390	Other articles of gaskets washers & other seal
83	40169400	Boat/dock fenders w/n inflatable
84	40169510	Air mattresses of inflatable artcles
85	40169590	Other items of inflatable artcles
86	40169910	Rubber cots for textile industry
87	40169920	Rubber bands
88	40169930	Rubber thread
89	40169940	Rubber blankets
90	40169950	Rubber cushion
91	40169960	Rubber bush
92	40169970	ear plug
93	40169980	stoppers
94	40169990	Others
95	40170010	Plts sheets rods & tubes etc of ebonite and vulcanite
96	40170020	Scrap waste and pwdr of hardened rubber (ebonite and vulcanite)
97	40170030	Printers roller
98	40170040	textile rollers
99	40170050	Type writers and cyclstylng rollers
100	40170090	Others

Source: https://commerce.gov.in/writereaddata/trade/ceca/anx2a.pdf

Appendix F1.

India's sensitive list under SAFTA for non-least developed contracting states (NLDCs) (Pakistan and Sri Lanka)

Sl No	HS Code	Description
1	400110	Natural rubber latex, whether or not prevulcanised.
2	400121	Natural rubber in other forms: Smoked sheets
3	400122	Technically specified natural rubber(TSNR)
4	400129	Other
5	400130	Balata, gutta-percha, guayule, chicle and similar natural gums
6	400300	Reclaimed rubber in primary forms or in plates, sheets or strip.
7	400400	Waste, parings and scrap of rubber(other than hard rubber) and pow and granules.
8	400510	Compound rubber, unvulcanized, in primary forms or in plates, shee strips: Compounded with carbon black or silica
9	400520	Solutions; dispersions other than those of sub heading No. 4005.10
10	400591	Plates, sheets and strip
11	400599	Other
12	400610	"Camel-back" strips for retreading rubber tyres.
13	400690	Other
14	400700	Vulcanized rubber thread and cord.
15	400811	Of cellular rubber: Plates, sheets and strips
16	400819	Of cellular rubber: Other 26
17	400821	Of non-cellular rubber: Plates, sheets and strips
18	400829	Of non-cellular rubber: Other
19	401210	Retreaded tyres
20	401220	Used pneumatic tyres
21	401290	Other
22	401610	Other articles of vulcanized rubber other than hard rubber.-Of cellul rubber
23	401692	Erasers
24	401693	Gaskets, washers and other seals
25	401695	Other inflatable articles
26	401699	Other
27	401700	Hard rubber (for example, ebonite) in all forms, including wastes an scrap; articles of hard rubber

Source i) https://commerce.gov.in/writereaddata/trade/safta.pdf (ii) Notification No. 68 /2012-Customs dated 31-12-2012

Appendix F2.

India's Sensitive list under SAFTA for least developed contracting states (LDCS)

S. No.	HS Code	Description
1	2203 to 2206	All goods
2	220710	All goods
3	2208	All goods
4	Chapter 24	All goods

Source: Notification No. 99/2011-Customs dated the 9th November, 2011

Appendix G.

Extent of tariff concession under India-Chile PTA

Sl No.	HS Code	Product Description	Extent of tariff concession (percentage of the applied rate of duty)
1	40119000	New pneumatic tyres of rubber, having a herring bone or similar tread.	80%
2	40169910	All Goods	80%
3	40169920	All Goods	80%
4	40169930	All Goods	80%
5	40169940	All Goods	80%
6	40169950	All Goods	80%
7	40169960	All Goods	80%
8	40169970	All Goods	80%
9	40169980	All Goods	80%
10	40169990	All Goods	80%

Source: Notification No. 19/2017-Customs New Delhi, dated the 16th May, 2017 available at cbic.gov.in

Appendix H

Exclusion list of India Korea CEPA

Sl No	HS Code (2002)	Description
1	40011010	---- Prevulcanised
2	40011020	---- Other than prevulcanised
3	40012100	- Natural rubber in other forms: --- Smoked sheets
4	40012200	- Natural rubber in other forms: --- Technically specified natural rubber (TSNR)
5	40012910	---- Hevea
6	40012920	---- Pale crepe
7	40012930	---- Estate brown crepe
8	40012940	---- Oil extended natural rubber
9	40012990	---- Other
10	40025900	- Acrylonitrile-butadiene rubber (NBR): --- Other
11	40027000	-- Ethylene-propylene-non-conjugated diene rubber (EPDM)
12	40030000	-Reclaimed rubber in primary forms or in plates, sheets or strip
13	40081910	---- Blocks of micro-cellular rubber but not of latex foam sponge, used in the manufacture of soles, heels or soles and heels combined, for footwear
14	40081990	---- Other
15	40082910	---- Rubber sheets and resin rubber sheets for soles and heels
16	40082920	---- Blocks used in the manufacture of soles, heels or soles and heels combined, for footwear
17	40082930	---- Latex foam sponge
18	40082940	---- Tread rubber and tread packing strip for resoling or repairing or retreading rubber tyres
19	40082990	---- Other
20	40092100	- Reinforced or otherwise combined only with metal: --- Without fittings
21	40093100	- Reinforced or otherwise combined only with textile materials: --- Without fittings
22	40094100	- Reinforced or otherwise combined with other materials: --- Without fittings
23	40103110	---- Where the rubber compound content is less than 25% by weight
24	40103190	---- Other
25	40103210	---- Where the rubber compound content is less than 25% by weight
26	40103290	---- Other
27	40111010	---- Motor cars tyres: Radials
28	40111090	---- Motor cars tyres: Other
29	40112010	---- Buses or trucks tyres: Radials
30	40112090	---- Buses or trucks tyres: Other
31	40114010	---- Tyres: For motor cycles
32	40114020	---- Tyres: For motor scooters
33	40114090	---- Tyres: Other

34	40115010	---- Bicycle: Multi-cellular polyurethane (MCP) tubeless tyres
35	40115090	---- Bicycle: Other, having a "herring-bone" or similar tread
36	40122010	---- Used tyre: For buses, lorries and earth moving equipments including light commercial vehicles
37	40122020	---- Used Tyres: For passenger automobile vehicles, including two wheelers, three wheelers and personal type vehicles
38	40122090	---- Used Tyres: Other
39	40169310	---- Patches for puncture repair of self- vulcanising rubber or a rubber backing
40	40169320	---- Rubber rings (O-ring)
41	40169330	---- Rubber seals (Oil seals and the like)
42	40169340	Gaskets
43	40169350	---- Washers
44	40169360	---- Plugs
45	40169390	---- Other

Source:https://commerce.gov.in/writereaddata/trade/INDIA%20KOREA%20CEPA%202009.pdf

Appendix I

List of items under the exclusion list of India in AIFTA

Sl No.	HS Code	Product Description
1	4001.10.10	Prevulcanised
2	4001.10.20	Other than prevulcanised
3	4001.21.00	Smoked sheets
4	4001.22.00	Technically specified natural ru
5	4001.29.10	Hevea
6	4001.29.20	Pale Crepe
7	4001.29.30	Estate Brown Crepe
8	4001.29.40	Oil extended natural rubber
9	4001.29.90	Other
10	4008.21.10	Used in the manufacture of sol
11	4008.21.20	For resoling or repairing or retr
12	4008.21.90	Other

Source:
https://commerce.gov.in/writereaddata/trade/India_schedule_to_ASEAN_CLMV.pdf

Appendix J

Tariff concession offered under India-Malaysia CECA

Sl No.	Chapter, Heading, Sub-heading and Tariff item	Description	Rate (in percentage unless otherwise specified)
1	400130 to 400220	All goods	0
2	400231	All goods	0
3	400239 to 400260	All goods	0
4	400270	All goods	5
5	400280 to 400299	All goods	0
6	4003	All goods	5
7	400400 to 400510	All goods	0
8	400520 to 400599	All goods	5
9	400610	All goods	0
10	400690 to 400819	All goods	5
11	400829	All goods	5
12	400911	All goods	0
13	400912	All goods	0
14	400921	All goods	0
15	400922	All goods	0
16	400931	All goods	5
17	400932	All goods	0
18	400941 to 400942	All goods	5
19	401011 to 401031	All goods	0
20	401032	All goods	5
21	401033	All goods	0
22	401034 to 401035	All goods	5
23	401036	All goods	0
24	401039	All goods	0
25	401110 to 401120	All goods	5
26	401130	All goods	0
27	401140 to 401150	All goods	5
28	401161 to 401199	All goods	0
29	401211 to 401212	All goods	5
30	401213	All goods	0
31	401219 to 401290	All goods	5
32	401310 to 401320	All goods	0
33	401390	All goods	0
34	401410	All goods	0
35	401490 to 401692	All goods	0

36	401693	All goods	5
37	401694 to 401695	All goods	0
38	401699	All goods	5
39	4017	All goods	0

Source: Notification No. 40/ 2016-Customs, dated the 21st June, 2016

Appendix K

Exclusion list of India Japan CEPA

Sl No.	HS Code	Description
1	40011010	Prevulcanised
2	40011020	Other than prevulcanised
3	40012100	Smoked sheets
4	40012200	Technically specified natural rubber (TSNR)
5	40012910	Hevea
6	40012920	Pale Crepe
7	40012930	Estate Brown Crepe
8	40012940	Oil extended natural rubber
9	40012990	Other
10	40023100	Isobutene-isoprene(butyl) rubber (IIR)
11	40030000	Reclaimed rubber in primary forms or in plates, sheets or strip
12	40081910	Block of micro-cellular rubber but not of latex foam sponge, used in the manufacture of soles, heels or soles and heels combined, for footwear
13	40081990	Other
14	40082910	Rubber sheets and resin rubber sheets for soles and heels
15	40082920	Blocks used in the manufacture of soles , heels or soles and heels combined, for footwear
16	40082930	Latex foam sponge
17	40082940	Tread rubber and tread packing strip for resoling repairing or retreading rubber tyres
18	40082990	Other
19	40092100	Without fittings
20	40093100	Without fittings
21	40094100	Without fittings
22	40094200	With fittings
23	40103210	Where the rubber compound content is less than 25% by weight
24	40103290	Other
25	40103510	Where the rubber compound content is less than 25% by weight
26	40103590	Other
27	40111010	Radials
28	40111090	Other
29	40112010	Radials
30	40112090	Other
31	40114010	For motor cycles
32	40114020	For motor scooters
33	40114090	Other
34	40115010	Multi-cellular polyurethane (MCP) tubeless tyres
35	40115090	Other, having a "herring-bone" or similar tread
36	40121100	Of a kind used on Motor cars (including station wagons and racing cars)

37	40121200	Of a kind used on buses or lorries
38	40122010	For buses, lorries and earth moving equipment including light commercial vehicles
39	40122020	For passenger automobile vehicles, including two wheelers, three wheelers and personal type vehicles
40	40122090	Other
41	40169360	Plugs

Source:
https://commerce.gov.in/writereaddata/pdf_download/IJCEPA_Basic_Agreement.pdf

Appendix L

List of India's trade agreements

Sl No.	Agreements and Year of Entry	Member countries	Type of Agreement	Date of notification in GATT/WTO and end of implementation period
1	Asia Pacific Trade Agreement (APTA) – July 1975	Bangladesh, China (joined on 2001), India, Republic of Korea, Lao PDR and Sri Lanka	Partial scope agreement and economic integration agreement	02-11-1976 (2018)+
2	India Sri Lanka FTA (ISLFTA) -March 2000	India and Sri Lanka	Free Trade agreement	17-06-2002 (2008)
3	Comprehensive Economic Cooperation Agreement (CECA) between The Republic of India and the Republic of Singapore - August 2005	India and Singapore	Free Trade agreement and economic integration agreement	03-05-2007 (2009)
4	Agreement on South Asia Free Trade Area (SAFTA)- January 2006	India, Pakistan, Nepal, Sri Lanka, Bangladesh, Bhutan, Afghanistan and the Maldives	Free Trade Agreement	21-04-2008 (2016)
5	India Bhutan Trade Agreement-July 2006	India and Bhutan	Free Trade Agreement	30-06-2008 (2006)
6	India-Chile PTA- September 2007	India and Chile	Partial scope agreement	13-01-2009 (2007)
7	India MERCOSUR PTA- June 2009	India and Brazil, Argentina, Uruguay and Paraguay	Partial scope agreement	23-02-2010 (2009)
8	India Nepal Trade Treaty - October 2009	India and Nepal	Treaty of Trade	02-08-2010 (2009)

9	India Korea Comprehensive Economic Partnership Agreement (CEPA) - January 2010	India and Korea	Free Trade agreement and economic integration agreement	01-07-2010 (2019)
10	ASEAN India Free Trade Area (AIFTA) - January 2010	India and Indonesia, Malaysia, Cambodia, Philippines, Singapore, Thailand, Brunei Darussalam , Vietnam, Laos, Myanmar	Free Trade agreement and economic integration agreement	19-08-2010 (20-08-24)
11	CECA between India and Malaysia - July 2011	India and Malaysia	Free Trade agreement and economic integration agreement	06-09-2011 (2019)
12	India Japan CEPA - August 2011	India and Japan	Free Trade agreement and economic integration agreement	14-09-2011 (2026)

Source: www.commerce.gov.in and www.rtais.wto.org accessed on 21/05/2020

Note: + For the amended agreement; * Figures in parentheses indicated the final year of implementation.