Research Article

Impact of nontariff measures on the exports of the beverage sector in India

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Abstract
In the recent past, agricultural exports, especially plantation crops, which are the backbone of India, have been subjected to many nontariff measures. Since the liberalisation of trade has led to the integration of global commodity markets, developing countries are significantly affected by these trade barriers, which indirectly hurt millions of plantation community. Traditionally, India is well known for its exports of beverages and stringent maximum residual limits, traceability issues, and food safety standards are complex issues surmounting trade in the plantation sector around the world. Hence, the present research study attempts to find the shock of nontariff measures on the prices of both export and domestic beverages and the hammering in returns to the Indian beverage industry by the partial equilibrium method. This model directly measures the simulation effect of nontariff measures by imposing NTM on tea and coffee sector. It is obvious that as the NTM percent increases from 10 percent to 25 percent on tea sector, the loss in export quantity was more from 22.24 million kg to 55.61 million kg and loss of revenue was from Rs. 2997 million to Rs. 7492 million for the corresponding NTMs. Likewise the loss in export quantity (62.85 million kg) and loss in revenue (Rs. 9412 million) were high in 25 per cent of NTM. The present study shows how to allow for market imperfections and trade facilitating effects of nontariff measures in the beverage sector.

Keywords: Beverage, Exports, Export restrictions, Nontariff measures, Trade policy

INTRODUCTION

Plantation crops have finer economic significance and occupy a crucial part of the Indian economy (Deepika, 2017). In the total export of agricultural commodities, 15 percent are contributed by tea, coffee and rubber. It acts as the livelihood for small, marginal farmers and plantation workers. Shubha and Rich (2017) devised that coffee is the second largest exported commodity after crude oil in the total production of coffee; 70 percent is exported, and the remaining 30 percent is consumed in India (Coffee Board, 2019). Likewise, India is the second largest country in terms of the area and production of tea, contributing 19 percent and 24 percent, respectively, in the world (Chawla *et al*., 2016).

The liberalization of trade policies under World Trade Orgaisation (WTO, 2020), has adversely affected plantation commodities such as tea and coffee in India (Goldar, 2005). In that context, market uncertainty leads to a decrease in the price levels of international and domestic markets by removing tariff and nontariff measures (Weerahewa, 2003). Being export-oriented commodities, prices in local or domestic markets are influenced by international prices.

Before 2010, two decades of economic liberalization were completed in India. The protection of domestic markets for different commodities has been protected under the Free Trade Agreement within the stipulated time period (Beghin *et al.,* 2015). The Indo-ASEAN trade pact encompasses a wide range of commodities.

Classification of commodities for reduction of tariffs is based on five categories: normal, sensitive, highly sensitive, special products and excluded products. In that classification, plantation commodities were included in varying product groups. Rubber commodities were included in the excluded group, in which there was no reduction in tariffs, whereas coffee, tea and pepper were included in the special product category. The coffee tariff rate for the most favoured nation (MFN) decreased from the base rate of 100 percent in January 2020 to 45 percent in December 2019 (Kazunbo, 2011). Similarly, the tariff reduction for the pepper crop was reduced by 20 percent from the basic rate of 70 percent (Melo and Shepherd, 2018). Many studies have narrated the effects of trade, in which one study explained that a reduction in tariffs will increase agricultural imports by one percent (Goldar *et al.,* 2010). Even after the reduction of barriers such as tariff and nontariff measures, significant exports increased from India to Sri Lanka, and ASEAN countries accounted for this increase (Dastagiri, 2017). Reforms on tariffs had a significant impact on the industry sector under the WTO and revealed that tariff effects cannot produce any positive impact on the Indian industry (Goldar, 2005). Exporter and importer tariff rates harmfully affect the products of finished machinery (Beckman and Arita, 2016). Competitive factors are responsible for the increase in exports of India (Aggarwal, 2004). The reduction of the tariff market effect of tariffs is petite, for the most part substance that exhibits considerable impacts on the Indian elasticity of price (Deepika, 2017).

In this framework, the study attempted to analyse the export performance of coffee and tea in India. The consequences explained that the inconsistency in exports and prices augmented after nontariff measures dwindled. The aims of the present study were i) To examine the patterns of nontariff measures in the tea and coffee sector, ii) To calculate the impact of NTM on price, quantity and revenue of the Indian beverage sector and suggest the suitable policy measures

MATERIALS AND METHODS

The data on import, export, consumption, production, supply, export price, consumption price, production price, international prices of coffee and tea nontariff barriers and tariff barriers were collected from their relevant product boards and from Food and Agricultural Organization, United Nations Conference Trade and Development and The Agricultural and Processed Food Products Export Development Authority, World Trade Organization, Commerce and Industry, Government of India, United Nations International Trade Statistics Database for 2016. Coffee and tea commodities were chosen for the current research study, and information on elasticities on demand, income, export demand, and price was obtained from earlier literature and studies. Fig. 1 illustrates the impact of NTM on export demand for beverages. When there is a lack of market information related to the quality of the beverages, there will be a right shift in the demand curve. In this diagram, the beverage demand increased due to signaling quality. The NTM imposed costs on the producers of the exporting country to meet the level of standard beverages for the consumers of the importing countries.

If the cost for domestic and foreign producers is the same, then NTM has no effect on domestic beverage supply. Here, "I" is the autarky equilibrium that implies no tariff measures on beverages. If NTM is applied on the beverages, the new equilibrium point "II" has a higher price and increased consumption. In the absence of an informational externality, beverage imports are M_B, and gains from trade will be the area of *i+ii* in the figure. It is higher when the information externality is not corrected (area *iv*). Finally, to sum up these, the NTM on beverages that corrected the information exter-
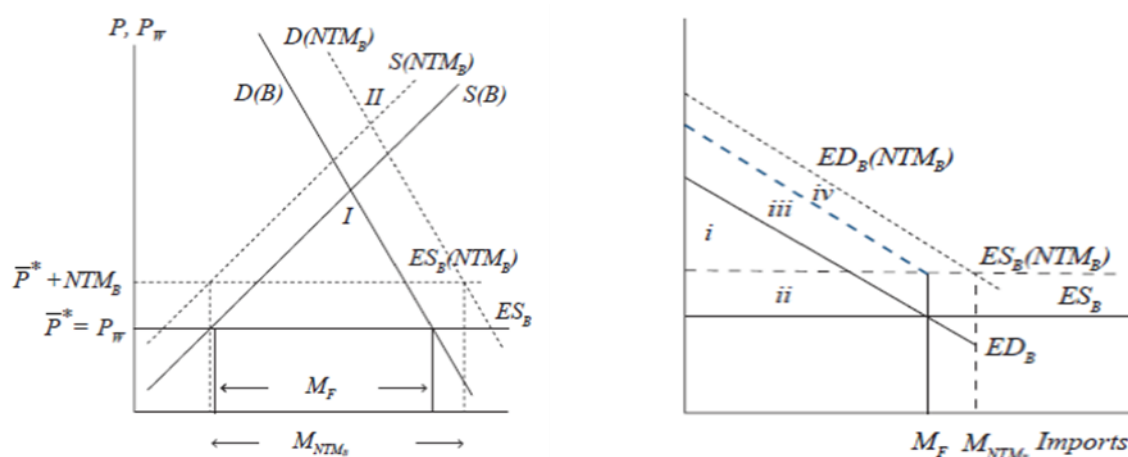
Fig. 1. *Impact of tariff on beverage demand (Source: Author's computation based on United Nations Conference Trade and Development, 2020 data*

nality raised welfare, but trade with uncorrected externalities may not improve the welfare of internal trade.

RESULTS AND DISCUSSION

Trade barriers for beverages
The quantity of trade between countries is limited by the level of tariffs, and it plays an important role in increasing government revenue. Tariff significance has become more vital with the World Trade Organization. The levels of tariffs are reduced in many countries because of trade liberalization. In Table 1, the study could notice the final bound duties and MFN applied duties for the beverages as recommended by the World Trade Organisation, 2020 . For these commodities, the average final bound duties are 133.1, and the maximum is 150. The binding percentage is 100. The average and most favoured nation (MFN) applied duties are 56.3 and 100, respectively. Share of imports of tea and coffee is 0.1.

Nontariff measures on beverages
The imposition of nontariff measures (NTM) has universally applied across all countries as well as all sectors

Table 1. WTO tariffs for beverages in India

Year	Final Bound Duties			Most Favored Nations Duties		Imports
	Average	Maximum	Binding Percentage	Average	Maximum	Sharing Percentage
2016	133.1	150	100	56.3	100	0.1
2017	133.1	150	100	56.3	100	0.1
2018	133.1	150	100	56.3	100	0.1
2019	133.1	150	100	56.3	100	0.1
2020	133.1	150	100	56.3	100	0.1

Source: WTO, Tariff Profiles, 2020.

Table 2. Categorization of NonTariff Measuress

Particulars	Measures	Classification	
Import Measures	Technical	1	Sanitary and Phytosanitary (SPS)
		2	Technical barriers to trade (TBT)
		3	Preshipment inspection and others
	Non-Technical	4	Related to protective of contingent trade
		5	Nonautomatic licensing, quotas, prohibitions and quantity manage
		6	Related to controlling of price, together with added taxes and rates
		7	Related to Finance
		8	Measures distressing rivalry
		9	Trade-linked investment controls
		10	Related to allocative controls
		11	Related to quantitative controls
		12	Subsidy
		13	Government procurement ceilings
		14	IPR
		15	Origin rules
Exports		16	Export controls

Source: United Nations Conference Trade and Development (UNCTAD), 2020

and types. The United Nations Conference on rade and Development-Trade Analysis and Information System (UNCTAD TRAINS), 2020, classification of NTMs is used to examine the current imposition of nontariffs. Table 2 depicts the classification of nontariff measures. In this regard, SPS and TBT measures are intensively imposed up to 67 to 111 percent on agricultural commodities, especially horticultural crops, accounted for by Veeramani *et al.* (2010). Technical measures are applied to all sectors, whereas SPSs are intensively used in the agricultural and agri food industries. For the plantation sector, quantitative restrictions and price control measures are mostly applied.

Tariff on Indian beverages

Tariff on tea and coffee for the years 2015 to 2020 is presented in Fig. 2. When compared to coffee, tea has a higher tariff rate. The tariff rate of tea ranged from 92 to 100%, whereas for coffee, it was 89 to 96% during the study period. From 2015 to 2019, the tariff rates of commodities such as tea and coffee showed an in-

creasing trend, but the coffee had a declining trend since 2019. The flow of the trade was modified by non-tariff measures, which are alternative measures for tariffs (Arita *et al.*, 2017).

### Share of tariff and nontariff barriers on beverages

Fig. 3 shows the share of tariff measures and nontariff measures in tea and coffee exports of India. The shares of tariff barriers, such as taxes and duties imposed on tea and coffee that are traded are 76 to 83 percent during the investigation period, while the share of nontariff barriers is the extensive formalities set for Indian tea and coffee ranging from 17 to 24 percent.

Indian scenario of the beverage sector

The production of tea has shown an increasing trend from 1267.36 million kg to 1389.70 million kg. In the same way, the consumption of tea has also shown an increasing trend. In the case of coffee, production and consumption decreased from 2016 to 2019. The production, consumption and export of Indian beverages are presented in Table 3.
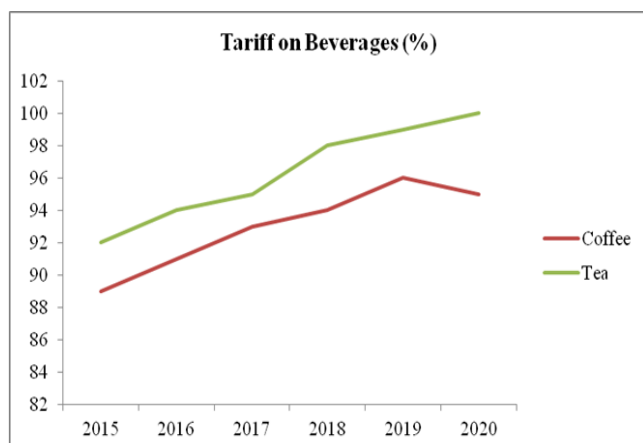
Fig. 2A. *Tariff on beverages (percent) Source: United Nations Conference Trade and Development (2020), Tea report (2019), Coffee report (2019) of India*
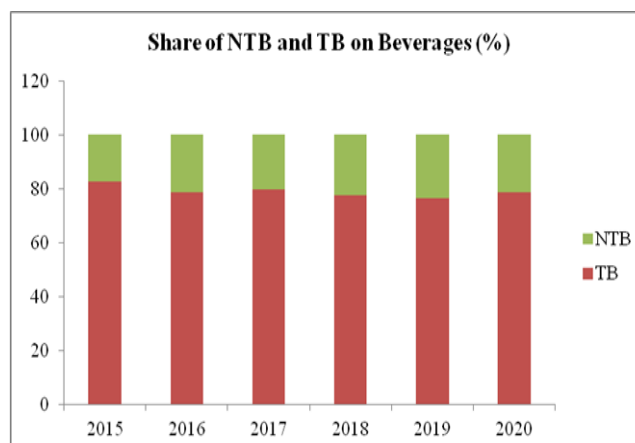
Fig. 2B. *Share of non tariff barrier NTB) and tariff barrier (TB) (percent) Source: United Nations Conference Trade and Development (2020), Tea report (2019), Coffee report (2019) of India*

Table 3. Production, consumption, and export of beverages (million kg)

Commodity	Year	Production	Consumption	Export
Tea	2019	1389.70	1146.50	243.20
	2018	1338.63	1082.57	256.06
	2017	1321.76	1069.85	251.91
	2016	1267.36	1044.91	222.45
Coffee	2019	313.24	79.48	233.76
	2018	305.07	73.96	231.11
	2017	345.97	82.27	263.70
	2016	369.66	118.24	251.42

Source: Tea and Coffee board, 2019

Table 4. Simulations of NTM on beverage prices (Rs./kg)

Commodity	Variable	Base (NTM 20% of exports)	NTM (10% of exports)	NTM (25% of exports)	Without NTM
Coffee	Producer Price	78.40	78.15	79.11	77.86
	Consumer Price	116.52	116.31	118.19	116.06
	Export Price	146.92	149.37	145.26	154.28
Tea	Producer Price	70.23	70.08	71.22	69.86
	Consumer Price	108.56	108.41	109.47	108.23
	Export Price	134.35	136.27	133.81	141.17

Source: United Nations Conference Trade and Development (2020), Tea report (2019), Coffee report (2019) of India

Table 5. Simulations of export quantity (million kg) and revenue (Rs.million) of the beverage industry (Rs. million)

Commodity	Variable	Base (NTM 20% of exports)	NTM (10% of exports)	NTM (25% of exports)	Without NTM
Coffee	Export Quantity	-50.28	-25.14	-62.85	0
	Revenue	-7530	-3765	-9412	7530
Tea	Export Quantity	-44.48	-22.24	-55.61	0
	Revenue	-5994	-2997	-7492	5994

Source: Author's calculations based data on table 3

Simulation results of the impact of NTM on domestic and export prices

The base scenario for the simulation of the impact of nontariff measures was set at 20 percent of quantum exports for both tea and coffee during 2016. The simulated results under the three scenarios were NTM at 10 percent and 25 percent of export quantity and without any NTM. The results of the simulations on producer price, consumer price and export prices of both coffee and tea revealed that there was less impact on domestic prices, but the export price was better when there was no NTM imposed upon the exports of Indian beverages, as given in Table 4. Likewise, Dal Bianco *et al.* (2016) highlighted that NTMs hamper trade in European Union countries.

Simulation results of the impact of NTM on exports and revenue in the beverage industry

The simulated results of the impact of NTM on export quantity and revenue to the beverage industry are shown in Table 5. Obviously, as the NTM percent increases, the loss in export quantity and loss of revenue to the beverage industry are evident. When no NTM was imposed, the revenue to the coffee industry of India was Rs.7530 million, and for the tea industry, the revenue was Rs.5994 million. According to Swinnen (2017), nontariff measures root higher import prices in countries. Therefore, any efforts to reduce the NTMs and proper trade negotiations would generate more income to the beverage industry of India.

Conclusion

The plantation sector is the most important stay for the majority of emerging economies, which are typically tropical countries susceptible to price and production risks. Nontariff measures endorse intensifying the disaster of tropical countries to have appropriate access to the markets of world. This study advocates that the Non Tariff Measures kindles and deter the flow of trade. Developed countries are the key importers of these commodities, frequently distorting the world trade in plantation crops, which harmfully influences the economy and livelihood. Trade of Indian coffee suffers from traceability problems, and ruining with crushed husks of coffee and tea from India is generally abandoned due to the fallacy of the occurrence of anthraquinone. However, appropriate negotiation of trade, following standards of World Trade Organization and suitable alertness concerning the issues of traceability of world order would protect millions of rupees to the beverages industry in India.

Conflict of interest
The authors declare that they have no conflict of interest.

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