The impact of WTO on Natural rubber concerning priceand the relationship of import of natural rubber with its domestic price

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Abstract

This paper made an attempt to examine the impact of WTO on the price of natural rubber in India.The removal of quantitative restrictions for the import of natural rubber implemented by the Government of India in order to adjust with the WTO policy actuallyaffected the price of Indian natural rubber, especially in second (2006-2011) and third phases (2011-2016). In the third phase, the growth rate of every type-wise price of natural rubber appeared to be highly negative. The volatility in prices was evident in all grades of natural rubber.While analysing the relationship of import of natural rubber with the domestic price, quadratic regression is used for the study.Both the imports and prices moved together initially but prices fell with higher levels of imports subsequently. Initially, the value of imports was low, so the price seems to be low. But when the value of imports became too high (beyond 3000), the price of domestic rubber falls.

Keywords: Import, Domestic price

1.Introduction

After the advent of liberalisation in the trade policies due to the WTO agreement, the rubber-producing countries of the world became merely price takers rather than price makers. Hence most of the countries globally have to adjust the prices domestically as per international prices. Price plays an important in determining the investment decision of the farmers. The removal of quantitative restrictions of natural rubber, which was implemented by the government of India to compromise with WTO on April 1st, 2001, had adversely impacted the Indian natural rubber economy. The implemented year itself India imported 49769 quantity of rubber, which was 454.84% increase in the growth rate of import compared to the previous period, i.e., 8970 tonnes during 2000-2001 (The Statistics and Planning Department, 2010) which was not according to the required amount. Due to this provision, a massive import of natural rubber flowed from different countries which paved the way for disequilibrium in the domestic market because of excess supply. The free trade agreements after WTO signed by India created the situation worse. The elimination of the restrictions imposed on the import of natural rubber through customs port since August 2004 again weakened the Indian rubber economy due to uncontrolled import. This heavy import paved the way for instability and price fall in the domestic rubber market. This is the most significant provision that directly affected the Indian rubber market. (Viswanathan, 2005).

2.Literature Review

Mohanakumar (2008), evaluates the volatility in the price of Indian natural rubber. The principal objective of this research is to analyse the factors responsible for instability in the price in the post-reform period. The advent of economic reforms implemented in 1991 resulted in the integration of the domestic economy with the international market. The reason behind the integration was the removal of non-tariff restrictions on the trade of Indian natural rubber. The intensity of volatility is high in the post-reform period compared to pre-reform phase. In the pre-reform period, the correlation co-efficient of time series analysis was -0.42, which depicts that the domestic market price of natural rubber is not dependent on the price of the international natural rubber market. Nevertheless, a positive correlation can be evident in price while analyzing the price in the post-reform period. This reveals that the price of the domestic natural rubber market is strongly dependent on the international natural rubber market.

Mohanakumar (2014), evaluated the price of natural rubber in India during globalization. According to the study, the government policies on natural rubber products have been impacted the price. The trade policies of government contributed the cheap and massive import of natural rubber which damaged the industry, especially after April 2001. The significant findings are as follows. The import of natural rubber tremendously increased compared to export after globalization. This created instability and fall in price. The lack of competitiveness was the feature of natural rubber sector in the globalization period. The value of exports reduced from 45% in the 1960s to 25% in the 2000s. The significant implication of this policy was that the natural rubber sector became price taker and the tyre sector became the price maker during liberalization. Instability index is used in analyzing the price. The research is descriptive based on secondary and primary data.

Philip (2008), aims to study the integration of market and to bind two market prices of natural rubber in Kerala during pre and post-reform phases. Co-integration is the tool used to analyze the validity of market integration. After examining the co-

integration between the two markets, the error correction model is employed. In order to test the order of integration, Augmented Dickey-Fuller Test (ADF), Philip's and Pearson's Zt and Zr tests are used. This study shows that there exists substantial evidence of market integration in the price of natural rubber. The change in the price of the natural rubber local market will be affected by changes in the primary market, especially in the post-reform period compared to the pre-reform period. This study depicts that the price volatility and its decline in the local market are influenced by the price volatility and its decrease in the primary market, especially in the post-reform period.

Mohanakumar and Chandy (2005), observe the price of Indian natural rubber in the pre-reforms period and post reforms period. This study clearly explains how the price fall directly impacted on the Indian natural rubber economy. The pre-reform phase is followed by protectionist policies and characterized by price stability. Nevertheless, the post-reform phase is pursued by liberalized policies and witnessed price instability. The significant findings are specified as follows. The price falls directly impacted on the investment decisions of farmers during the post-reform period. The application of fertilizers, agro-management practices and weeding operations in farming were adversely affected due to price fall. This implicated in the growth of area, production and productivity of Indian natural rubber. The price decline negatively impacted employment and labour relations too. The lack of skilled tappers became an integral factor in the productivity of natural rubber.A sample survey is used for the study based on descriptive research. Regression is employed to analyse the price of the domestic and international rubber market. In order to find the instability of both the pre-reform phase and post-reform phase, Cuddy-Della Valle Index is used.

3.Objectives

1.To examine the impact of WTO on the price of Indian natural rubber

2.To analyse the impact of import of natural rubber on its domestic price

4.Materials and Methods

The present paper is descriptive and analytical and uses secondary data. Secondary data is obtained from The Indian Rubber Statistics (IRS) published by The Statistics and Planning Department, The Rubber Board. In the study, data collected by The Rubber Board during the period 1986-2016were examined in order to determine the objectives and the impact of WTO on price that influence the price of Indian natural rubber.Quadratic regression is used to analyse the impact of import of natural rubber on its domestic price.

5. Results and Discussion

Analysis on the impact of WTO of price on natural rubber

Grade wise price of Indian natural rubber during pre-WTO (1986-2001) and post-WTO (2001-2016)

Table 1 reflects the price of different grades of Indian natural rubber during pre-WTO (1986-2001)and post-WTO (2001-2016). The rate of growth of the grade-wise price of natural rubber seemed to be lowest in the pre -WTO policy period compared to the post- WTO period. After post- WTO period, the rate of growth witnessed highest. During the pre-WTO period, RSS4 showed the growth rate, i.e. 82.89%. It highly increased to 250.25%in post-WTO period. In the case of latex, during the pre-WTO period, 92.65% growth rate is witnessed. The growth rate increased to 101.97% in the post-WTO period. During the pre-WTO period, the growth rate of import of solid block rubber was 58.93%. It steeply increased to 256.23% in the post-WTO period.The instability in the prices of natural rubber as measured by the coefficient of variation increased reasonably for all grades of natural rubber, as shown in Fig.1. For instance, the instability of the price of RSS4 was 38.49 in the pre-WTO period, which inflated to 51.68 in the post-WTO period.

Table 1.Grade wise Indian natural rubber price and instability during pre-WTO (1986-2001) and post-WTO (2001-2016)

Grades	Price		Instability	
	Pre-WTO (1986-2001)	Post-WTO (2001-2016)	Pre-WTO (1986-2001)	Post-WTO (2001-2016)
RSS1	97.92%	277.54%	39.87	51.53
RSS2	92.92%	250.54%	38.62	51.46
RSS3	88.09%	246.34%	38.38	51.37
RSS4	82.89%	250.25%	38.49	51.68
RSS5	80.68%	256.22%	38.28	52.25
EBC2X	94.51%	277.88%	40.41	52.55
Latex(60% DRC)	92.65%	101.97%	33.73	43.82
ISNR20	58.93%	256.23%	33.32	52.40

Source: Indian Rubber Statistics, The Rubber Board (Ministry of Commerce and Industry, Government of India

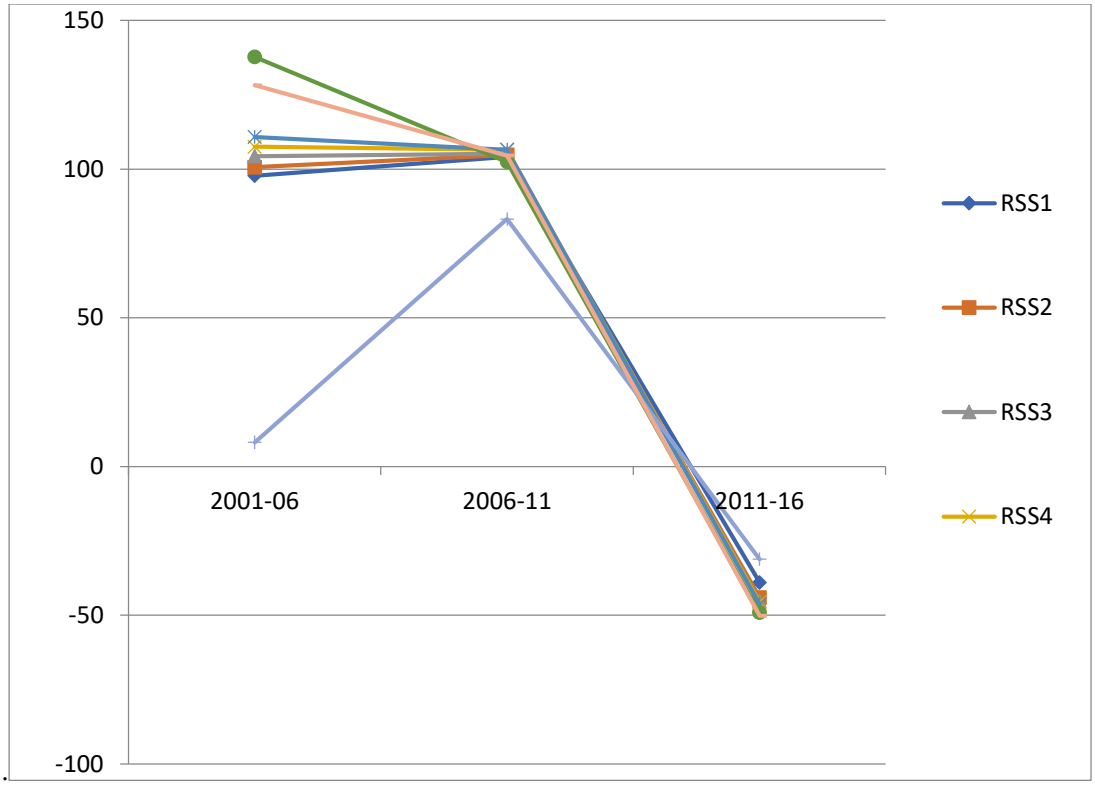

Fig. 1:Instability and fall in Indian natural rubber price after WTO (2001-2016

Analysis on relationship between the import of natural rubber and its domestic price

To examine the nature of the relationship between imports of natural rubber and the domestic rubber prices, a regression model was fitted for the price on imports (Tables 2,3 and figure 2). A quadratic regression model was used in consistency with the nature of the relationship as examined by a scatterplot. The specification of the model was

$P_t = \beta_0 + \beta_1 M_t + \beta_2 M_t^2 + \varepsilon_t$ (1)

The goodness of fit was very high (R^2 = 0.839). The model was statistically significant ($p<0.01$). Imports and prices moved together initially, but the price fell with higher levels of imports subsequently. Initially, the value of import is low, so the price seems to be low. However, when the value of import became too high (beyond 300000), the price of domestic rubber falls. That means initially when the price of rubber is rising with imports, but it reaches a particular price fall with a further rise in import. So, the quota should be fixed to control the import and its consequence adversely affects the price of rubber.

Table 2:Relationship between the import of natural rubber and its domestic price: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.916	.839	.828	2340.711

Table 3:Relationship between the import of natural rubber and its domestic price: Coefficients

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Import	.121	.013	2.688	9.099	.000
import ** 2	-2.044E-007	.000	-2.006	-6.789	.000
(Constant)	-271.823	773.738		-.351	.728

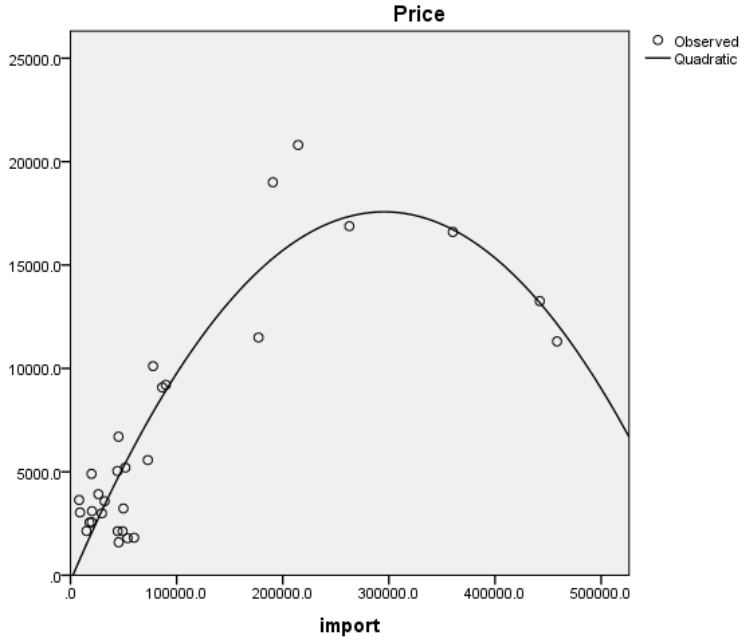

Fig. 2:Relationship between the import of natural rubber and its domestic price

6.Conclusion

The elimination of quantitative restrictions for the import of natural rubber introduced by the Government of India in order to compromise with the WTO policy really impacted the price of Indian natural rubber, i.e., second (2006-2011) and third phases (2011-2016). In the third phase, the growth rate of every type-wise price of natural rubber seemed to be highly negative.The instability in prices was evident in all grades of natural rubber. For instance, the coefficient of variation of price of RSS4 increased from 38.49 in the pre-WTO period to 51.68 in the post-WTO period.The relationship between the import of natural rubber and its domestic price was modelled using a quadratic regression model which revealed that too high imports (beyond300000) hampered domestic prices indicating the possibility of quantitative restriction of imports of natural rubber.

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