

Imports of Indian Agricultural Commodities in the Light of WTO's Reforms

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Abstract: *It's very imperative to know the scenario of trade for every open economy. India is the second populous country in the world and its half population depends on agri sector directly and indirectly. Thus, it is necessary to focus on the trade of agriculture sector in India. This paper basically emphasis on the tabular structure of agricultural imports only in the light of WTO's reforms. To find out the impact of WTO's agreement on agriculture on the imports of Indian agricultural products, ANOVA test has been used here. At the same time, small explanation has been covered of all the results understanding the importance of the facts. It is based only on empirical results of the study.*

Keywords: GDP, AOA, UR, QR, WTO and GATT

1. Introduction

To identify the scenario of trade becomes very important for every open economy. Each sector plays a significant role in this manner since India is mainly an agriculture based economy. Thus, for the growth and development of Indian economy, it is necessary to focus on the agriculture sector. Moreover, as per the contribution to the employment, agriculture contributes 50 per cent. It clears half population of India; which is the second populous country in the world; depend on agri sector directly and indirectly. WTO is an international organisation which sets the rules and regulations for the trade of each member country. India is also its member country from the very beginning of its origin at the time of GATT. So, within the only ambit of Agreement on Agriculture, that is one particular part of various agreements, trade of agriculture is possible with other countries. Now, as per this agreement, many types of tariffs on imports have to be reduced by Indian government. So the consumption demands of low produced Indian products have been grown rapidly. It includes mainly edible oil, pulses and spices etc., which have been analyzed in this paper with the help of ANOVA technique.

2. Review of Literature

Gill and Brar (1996); observed that due to low supply response, rise in the price of agricultural commodities would not affect the Indian agriculture. Under market access provisions of the AoA, developed countries were required to convert non-tariff barriers into tariffs and commit to reduction of tariffs by simple average of 36per cent with a minimum rate of reduction of 15per cent for each tariff line and in the case of developing countries, it was committed by simple average of 24per cent with a minimum rate of reduction of 10per cent for each tariff line. **Branchi, M. et. Al (1999):** in this paper, the author analyzes the impact of price variables on the production and exports of coffee with special focus on a sub-group of Sub-Saharan countries. Further, the investigation of the importance of trade policy in determining export performance with the help of linear regression model and cross country regression analysis on the sample of 26 countries, among them 12 are the African countries over a period of 20 years, from 1970- 1990 has

been done. Contribution of exchange rate and degree of producers taxation has been evaluated with the help of Nominal Protection Coefficient technique and found that in the Case of coffee the role of domestic price policies in the production and export is relevant. Some non-price factors were also found responsible for the cross country variability in the performance of the coffee sector.

Kumar, Ratnesh (2002): observed that the agriculture sector in India had been almost unaffected by the reform process and the public distribution system (PDS) with minimum prices and it was considered an ineffective tool for poverty alleviation. The production has been increased due to the ample use of fertilizers and easy access to credit. Finally, liberalization and other reforms, both were found responsible for the growth in exports and imports of agriculture. The author also enlightened the birth of WTO, its structure, functions and about its predecessor GATT. He focused on the results of different trade negotiations round. Dispute Settlement Mechanism of WTO had also critically analyzed and found that number of average disputes had been reduced after the settlement of this mechanism in 1995.

Bagchi, Jayanta (2003): also found that in case of India, Aggregate Measure of Support was found to be negative and there was no obligation to reduce export subsidies in agriculture. Moreover, India was also found free to provide subsidies to reduce the cost of supporting activities of agriculture. Further, a great attention has been given on the role of developed countries in the agriculture sector and concluded that the US found the largest exporter of cereal gains. The world market was mostly affected by the US trade policies due to its largest share. In this study also, the main focus has been given on the various three issues of Agreement on Agriculture like as: market access, domestic support and export subsidy. It was found that although tariffs had been reduced but there were a lot of ambiguities regarding removal of non- tariff barriers.

Chand (2005) found that in short run, no major impact of the AoA is likely to take place on Haryana's agriculture, mainly because of three reasons. Firstly, there are no reduction commitments on domestic support because the support provided to agriculture in India is much below the de minimis level, i.e. 10 per cent as specified in the agreement.

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Secondly, there are no commitments on the reduction of export subsidies for the simple reason that there are no direct subsidies as such in the case of agriculture. Thirdly, India is not obliged to provide any minimum market access opportunities owing to Balance of Payment (BoP) reasons.

3. Research Objectives and Methodology

The main objective of this paper has been examined with the help of proper research methodology steps.

RO: To study the impact of WTO's reforms on the imports of Indian agricultural commodities

Selection of Sample Units: To find out the impact of WTO's reforms on the import of agricultural products the very important statistical measure i.e. ANOVA has been used to find out the changes in agri trade. These objectives are based on some selected principal products of Indian agriculture like as Rice, Wheat, Other Cereals, Pulses, Cotton, Sugar, Tea, Fruits, Floriculture, Spices, Vegetables, Tobacco, Beverages and Edible oils etc. The criteria for selection of these products described by researcher in the table 1 below.

Table 1: Categories of Selected Agriculture Products

Perishable Goods	Cereals & Pulses	Other products
1) Fruits	1) Rice	1) Cotton
2) Vegetables	2) Wheat	2) Sugar
3) Flowers	3) Maize	3) Coffee
4) Milk	4) Bajra	4) Tea
5) Meat	5) Barley	5) Spices
6) Dairy Products	6) Gram	6) Beverages
7) Fish	7) Moong	7) Tobacco
8) Eggs	8) Urad	8) Edible oil

Source: Prepared by the researcher

Study Period

To study the impact of WTO's reforms on the above products, data has been collected from Centre for Monitoring Indian Economy, India trade database from 1991-92 to 2015-16. This has been further divided into five phases given in table 2.

Table 2: Classification of time period for Objectives

Phase-I	(1991-92 to 1995-96)	Pre WTO period but after coming of LPG reforms in India.
Phase-II	(1996-97 to 2000-01)	Implementation period of WTO's provisions (6 years only for developed countries)
Phase-III	(2000-01 to 2005-06)	Implementation period of WTO's provisions (10 years for developing countries)
Phase-IV	(2006-07 to 2010-11)	Post WTO period (Indian economy faced great recession also during this time)
Phase-V	(2011-12 to 2015-16)	Post WTO period (in the light of WTO's current scenario)

Source: Prepared by the researcher

Research Hypotheses

To examine the differences in the mean value of the dependent variables (imports) for several categories of a single variable or factor (WTO's reforms), the one-way

ANOVA has been calculated. As, ANOVA tells the difference between the two or more means are same or not. So, there have been two hypothesis set up for the achievement of this objective. These are as follows:

H0: There was no significant impact of WTO's reforms on the imports of different selected products.

H1: There was significant impact of WTO's reforms on the imports of different selected products.

4. Analysis and Interpretation

ANOVA tells the difference between the two or more means, thus to measure the implications of World Trade Organization on the imports of different selected products, between the five different reforms phases of trade (more than two), the ANOVA method has been used here.

In order to apply one-way ANOVA, first of all normality conditions of all the products's imports over the all five phases has been tested using Shapiro Wilk test¹. This test of normality assumes the null hypothesis that variable is normally distributed. So it is clear from the table no. 3 (imports) that the p value was greater than the 5% for each product and in each reforms phases. The null hypothesis of normality is accepted and data is normal.

Table 3: Results of Normality Test for Agri Products' Imports

Products	WTO's Reforms	Shapiro-Wilk		
		Statistic	df	Sig.
Imports of Edible Oil	phase-1	.730	5	.320
	phase-2	.748	5	.550
	phase-3	.938	5	.650
	phase-4	.906	5	.443
	phase-5	.859	5	.225
Imports of Fresh Fruits	phase-1	.907	5	.449
	phase-2	.961	5	.814
	phase-3	.918	5	.516
	phase-4	.907	5	.449
	phase-5	.957	5	.784
Imports of Non-Basmati Rice	phase-1	.874	5	.282
	phase-2	.867	5	.255
	phase-3	.945	4	.683
	phase-4	.552	5	.620
	phase-5	.970	5	.875
Imports of Other Cereals	phase-1	.552	5	.530
	phase-2	.637	5	.550
	phase-3	.716	5	.061
	phase-4	.955	5	.771
	phase-5	.815	5	.107
Imports of Pulses	phase-1	.829	5	.136
	phase-2	.945	5	.698
	phase-3	.973	5	.893
	phase-4	.966	5	.846
	phase-5	.893	5	.372
Imports of Spices	phase-1	.943	3	.541
	phase-2	.906	5	.443
	phase-3	.953	5	.759
	phase-4	.971	5	.884
	phase-5	.914	5	.494
Imports of Sugar	phase-1	.611	5	.080
	phase-2	.840	5	.165
	phase-3	.785	5	.061
	phase-4	.823	5	.123

	phase-5	.812	5	.101
Imports of Wheat	phase-1	.751	4	.054
	phase-2	.923	5	.551
	phase-3	1.000	3	1.000
	phase-4	.801	5	.082
	phase-5	.612	5	.051

Note: Bold figures shows the values more than 5 per cent level of significance.

Secondly, the homogeneity of variances using Levene Statistics or Welch test has been checked out by using at 5 per cent level of significance through the use of SPSS version 21. It assumes that there is homogeneity of variances between various groups. The results of it, has been mentioned in table no. 4 (imports) and observed except some products, all have less than 5 per cent significant value.

Table 4: Test of Homogeneity of Variances for Agri Products Imports

Agri Products	Levene Statistic	df1	df2	Sig.
Imports of Edible Oil	6.132	4	20	.002
Imports of Fresh Fruits	8.590	4	20	.000
Imports of Non-Basmati Rice	24.870	4	19	.000
Imports of Other Cereals	3.164	4	20	.036
Imports of Pulses	4.898	4	20	.006
Imports of Spices	10.280	4	18	.000
Imports of Sugar	3.974	4	20	.016
Imports of Wheat	9.675	4	17	.000

After having normality and homogeneity of variances, ANOVA F-test was applied to check the significance difference between the mean of imports under each reform category. The results of the test were given by table no.5 (imports).

Table 5: ANOVA F-test Results for Agri Products Imports

Imports of Products		Sum of Squares	df	Mean Square	F	Sig.
Imports of Edible Oil	Between Groups	291636633.792	4	72909158.448	54.360	0
	Within Groups	26824605.748	20	1341230.287		
	Total	318461239.540	24			
Imports of Fresh Fruits	Between Groups	5383232.126	4	1345808.031	59.099	0
	Within Groups	455442.836	20	22772.142		
	Total	5838674.962	24			
Imports of Non-Basmati Rice	Between Groups	318.341	4	79.585	3.236	0.035
	Within Groups	467.352	19	24.597		
	Total	785.693	23			
Imports of Other Cereals	Between Groups	1385.578	4	346.395	3.404	0.028
	Within Groups	2035.028	20	101.751		
	Total	3420.606	24			
Imports of Pulses	Between Groups	21749198.438	4	5437299.609	31.425	0
	Within Groups	3460497.628	20	173024.881		
	Total	25209696.066	24			
Imports of Spices	Between Groups	1066243.510	4	266560.877	39.987	0
	Within Groups	119990.787	18	6666.155		
	Total	1186234.297	22			
Imports of Sugar	Between Groups	562636.458	4	140659.114	1.478	0.246
	Within Groups	1903046.180	20	95152.309		
	Total	2465682.638	24			
Imports of Wheat	Between Groups	509774.966	4	127443.741	1.585	0.224
	Within Groups	1366477.098	17	80381.006		
	Total	1876252.064	21			

5. Findings

Finally, Table no. 5 depicts that except wheat and sugar, p value is significant for all other products imports. A null hypothesis was that there is no significant impact of WTO's reforms on the imports of products. Here this hypothesis is rejected at 5 per cent level of significance. It means that there is significant impact of WTO's reforms on the imports of all products except only wheat and sugar.

Moreover, with the help of F-value, it is so clear that edible oil, fresh fruits, pulses and spices are those agri products which contribute a pivotal role in the imports of total Indian agri products as the F-value of there is highest as compare to other selected ones.

6. Conclusion

Thus, it been concluded that India must be self dependent in the production of edible oil, pulses and spices etc. so that the outflow of foreign currency can be controlled and positive BOP can be achieved. Secondly, it will also be beneficial for those people who are mainly dependent on agriculture for their employment as it consist more than 50% population of Indian economy.

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