



Export of Cotton from India: Performance, Competitiveness, Destinations and Determinants

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ABSTRACT

The phenomenal growth of cotton in India has led to production increase more than the domestic consumption making India emerge as the second largest exporter of cotton. The present study has analyzed the growth, the instability and determinants of cotton exports from India. The study also examined the exports of cotton under the WTO regime. The analysis of composition of exports showed that India has been exporting Bengal desi and small staple type of cotton for years and the export of long and extra long staple type has been increasing and is in demand from abroad with high value realisation. The growth in exports was higher in post –WTO period. The study also revealed that volume of international exports prices and domestic production were the factors determining the exports from India. The major destinations of India's cotton exports are China, Pakistan and Bangladesh.

Key words: cotton, export, WTO, growth, instability, determinants

JEL Classification:F14, Q13, Q17, Q18, Q38

INTRODUCTION

Cotton the king of fibres, referred as white gold is one of the important commercial crops in India. Eighty five percent of the cotton is grown in ten major countries of the world among which India stands second in production. India's production has increased from 56 lakh bales in 1960-61 to 290 lakh bales in 2008-09. India ranks first in area with 101.70 lakh hectares (ha) in 2009-10 under cotton crop and is the second largest exporter with exports reaching 75 lakh bales in 2008-09 from a mere 0.60 lakh bales in 2000-01. (Cotton Advisory Board, 2010). Cotton is cultivated in three agro-ecological zones (north, central and south) of the country. The central zone has 67 per cent of the cotton grown. The major cotton growing states include Punjab, Haryana, Rajasthan, Maharashtra, Gujarat, Madhya Pradesh, Andhra Pradesh, Karnataka and Tamil Nadu.

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Though India stands second in consumption of cotton, the production is more than consumption which would have led to glut in the market if the surplus cotton could not be exported. Keeping in view these facts, it is important to analyze its performance and identify the factors affecting it particularly under the WTO regime and trade liberalization. This paper has discussed the performance of cotton with the following specific objectives: (i) To study the growth and instability of cotton exports and the impact of WTO and trade liberalization on the export of cotton, (ii) To know the major destinations of India's exports and their individual shares (iii) To identify the determinants of cotton exports from India.

DATA AND METHODOLOGY

The time series data (1985-2008) on cotton exports from India is used for the study. Though cotton is traded in various forms like raw cotton, yarn, sewing thread etc. the raw cotton (lint) exports are considered for this study. For the purpose of the analysis the cotton exported was grouped into five types based on their staple length as (a) Bangladeshi cotton of 16 mm staple length (b) Short staple cotton of below 20 mm length (c) Medium staple cotton of 20 - 28.5 mm length (d) Long and extra long staple length of 28.5 mm - 34.5 mm and above (e) Cotton waste as 'Others'.

The data on the exports were taken from the various issues of the Monthly Statistics of Foreign Trade, DGCIS, Kolkata. Data for exports was from DGCIS publications, world trade in cotton and world prices were obtained from the data available in the FAO trade yearbook. Historical exchange rate data was obtained from the website of RBI, Govt. of India. The instability in the exports was analyzed using the Cuddy Della Valle index, a commonly used measure for estimating the magnitude of instability in the time series data.

$$\text{Instability index} = CV \times \sqrt{1 - R^2}$$

Where CV = Coefficient of variation in %, R^2 = Coefficient of determination

The factors influencing the export of cotton were identified using the Cobb-Douglas type demand function.

$$Y = aV^{b_1} (DP)^{b_2} R^{b_3} Q^{b_4} (ER)^{b_5} U$$

Where

Y = India's export of cotton (Mt)

V = Volume of international trade in cotton (Mt)

DP = Domestic price (Rs/tonnes)

R = Ratio of Indian to non-Indian international prices.

Q = Cotton production in India (Mt)

ER = Exchange rate (Rs/US\$)

a = intercept

b_{Y_s} = elasticity

U_i = random error terms $U_i \sim N(0, \sigma^2_{ui})$.

The regression analysis was carried out with the data from 1985 to 2007 using Ordinary Least Squares (OLS) method.

RESULTS AND DISCUSSION

Trade Performance of Indian Cotton

Staple length wise the annual compound growth rates (CGR) of exports and its instability pertaining to the period 1985-86 to 2008-09 have been presented in Tables 1 and 2 respectively. The results revealed that Bengal desi type of cotton's growth was 8.85 per cent per annum with small staple length type with a growth of 11.65 per cent per annum and were significant at 5 per cent; long and extra-long type of cotton exports have registered a growth of 8.34 per cent and 'others' exhibited a higher growth rate of 11.92 per cent per annum which was significant at 1 per cent. The medium staple length type registered a growth of 9.11 per cent per annum which was non-significant.

TABLE 1: ANNUAL COMPOUND GROWTH RATE OF STAPLE LENGTH WISE COTTON EXPORTS FROM INDIA

(1985-86 to 2008-09)			
Type	Quantity	Value	Unit value
Bengal desi	8.85**	9.90**	0.96
Small	11.65**	10.49	0.069
Medium	9.11	9.41	3.02
Long and extra	8.34	11.27*	2.70*
Others	11.92***	15.93**	3.58
Total	8.94**	11.07**	1.95

***, **, *Significant at 1, 5 and 10 % level respectively.

The value of cotton exports of all staple length have shown positive growth rate over time. The highest growth is noticed for 'others' followed by long and extra type, small, Bengal desi and medium type of cotton. The results of the growth in unit value of cotton exports have registered positive growth and only long and extra-long type showed significant growth of 2.70 per cent per annum. The growth in total exports show positive growth for quantity, value and unit value of exports.

The quantity and value of cotton exports have registered a significant growth of 8.94 and 11.07 per cent per annum respectively. The unit value shows comparatively less growth indicating that value realization has not shown a significant growth. The results of

instability show that the medium and small staple type of cotton show high rates of instability indicating higher inter year fluctuations in quantity and value of exports.

TABLE 2: INSTABILITY IN STAPLE LENGTH WISE COTTON EXPORTS (1985-86 TO 2008-09)

Type	Quantity	Value	Unit value
Bengal desi	85.54	92.36	57.96
Small	172.22	153.24	83.78
Medium	164.84	158.98	357.46
Long and Extra	114.27	113.34	40.46
Others	60.11	83.34	44.25
Total	112.88	123.62	36.08

The instability in unit value is the highest for medium type of cotton indicating greater fluctuations due to quality parameters of this type over the years. The 'others' and long and extra long type were found to be comparatively stable.

Impact of World Trade Organization (WTO) on Cotton Export

The annual compound growth rates for cotton exports from India before (1985-86 to 1994-95) and after (1995-96 to 2008-09) were estimated to study the impact of WTO on the trade performance of India in cotton and the results are presented in Table 3.

Table 3. Growth of Cotton Exports from India

Description	Pre-WTO (1985 to 1994)	Post -WTO (1995 to 2008)	Over all period
Quantity	6.44	28.27**	8.94**
Value	4.58	29.72*	11.07**
Unit value	-1.75	1.125	1.95

Note: **, * significant at 5 and 10 % level respectively

The growth rates for the export of cotton were found to be significant in quantity and value of exports during post-WTO period and for overall period. The growth in quantity and value of exports in post -WTO period was 28.27 and 29.72 per cent per annum respectively. In case of unit value the growth was positive but not significant. During the pre-WTO period the growth in quantity, value show positive growth while unit value showed a negative growth of 1.75 per cent per annum. A comparison of growth rates during both the periods indicated that growth in exports of cotton was higher during post-WTO period than that in pre-WTO period indicating a favourable situation for cotton exports from India.

The instability index was estimated and presented in the Table 4. The instability was higher in the post- WTO period than pre-WTO period. In the post -WTO period though

The results revealed that over the years the shares of Bangladesh, China, Thailand and Indonesia have been increasing and the exports were concentrated to these countries. The changes over the years show that the imports to UK, Sri Lanka, Germany, Japan and other group of countries decreased. The export share to Bangladesh increased from 0.35 per cent in 1986 to 12.95 per cent in 2008 and the increase was higher in case of China with an increase from 12.42 per cent in 1986 to 63.87 per cent in 2006 and slightly decreased to 45.86 percent in 2008-09. In terms of value also a similar trend is noticed.

India's comparative advantage in terms of geographical proximity (distance) and political proximity are determining the destinations. Nearly 72 per cent of India's exports are concentrated towards China, Pakistan and Bangladesh. Pakistan which is presently a major importer was included in 'Others' as it started importing only from 2004-05. India has been gradually improving relations with Pakistan with the frame work of South Asian Free trade Area (SAFTA) being made in January 2004 and the cotton trade through the border would get Rs 200 per quintal more than the domestic price specially for Punjab. In the year 2008-09 the share of Pakistan in India's cotton exports was 13.50 and 13.76 per cent in quantity and value terms respectively.

Determinants of Export of Cotton from India

The factors affecting the export of raw cotton from India were identified using regression analysis for the period from 1985-2007 and the results are presented in Table 8. The factors like volume of international cotton exports (Mt), Domestic price (Rs /tonne), ratio of domestic international prices, domestic production (Mt) and exchange rate (Rs/US\$) were taken into consideration. The above factors could explain 99 per cent of the total variations in the export of cotton from India.

TABLE 6: DETERMINANTS OF COTTON EXPORTS FROM INDIA

Items	Coefficients	Standard error
Constant	8.63**	4.045
Volume of international cotton exports (Mt)	0.45*	0.244
Price (Rs/tonne)	-0.57***	0.112
Ratio of Indian to non- Indian international prices	1.053***	0.026
Domestic production (Mt)	0.29	0.273
Exchange rate (Rs/US\$)	0.528***	0.122

***, **, *Significant at 1, 5 and 10 % level respectively.

The coefficients for all variables except domestic production were statistically significant. Demand for cotton from India is found to increase with increase in the international trade in cotton that is with one percent increase in world cotton trade;

demand for Indian cotton exports would increase by about 0.45 per cent. The ratio of domestic international prices was positive and highly significant showing that the realization in price for exports from India in relation to the world price increased with increase in exports. It is expected to capture the profitability of exporting the commodity and the export price in commercial crops like cotton seems to play an important role. The domestic price of Indian cotton had negative impact on the export of cotton. The exchange rates are important in explaining the variations in exports. (Reddy and Narayanan, 1992). The exchange rate showed a significant positive impact on the exports of cotton from India. The domestic production exhibits positive impact on the exports from India. The increase in the production of cotton in recent years has made it possible for India to be the second largest exporter of cotton.

CONCLUSIONS

The study has revealed that India among the different staple lengths exported India has been competitive in the export of long staple variety for decades. The results show that world trade in cotton, prices, exchange rate and domestic production of cotton determines the exports from India. As china has increased its capacity and investment in textiles since 2000 the exports of cotton from India to china has been increasing with increase to Pakistan and Bangladesh as well. Although India dominates in the exports of cotton the demand for domestic consumption is also increasing with the government's involvement in pricing. India's decision to raise export tax of raw cotton would also influence the exports from India in the near future.

REFERENCES

- Balassa, B. (1965), "Trade liberalization and revealed comparative advantage", *The Manchester School Econ. and Soc. Studies*, **33** (2):99-123.
- Dalum, B.K., Laursen, K. and Villumsen, G. (1998), "Structural change in OECD export specialization patterns: De-Specialization and stickiness", *International Rev. Applied Econ.*, **12**: 447-67.
- Hoda, A. and Gulati, A. (2007) *WTO Negotiations on Agriculture and Developing Countries*. New Delhi: Oxford University Press.
- Reddy, V.R. and Narayanan, K. B. (1992) , "Trade experience of Indian agriculture:Behaviour of net export supply functions for dominant commodities", *Indian J. Agric.Econ.*, **47** (1): 48-61.
- Shinoj, P. and Mathur, V.C. (2008), "Comparative advantage of India in agricultural exportsvis-à-vis Asia: post reforms analysis", *Agric. Econ. Res. Rev.*, **21**(1): 60-66.