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Competitiveness of Cotton Export of India –A Shift Share Analysis

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ABSTRACT

Present study analyses the growth trends and competitiveness of India's cotton export during the reform era. Using Shift share analysis for time series data collected from various secondary sources from 1993-94 to 2011-12 the study explores the factors responsible for the competitiveness and reasons for lack of competitiveness the cotton export from India.

KEYWORDS : Shift Share Analysis, Cotton, Export, India

INTRODUCTION

India has been one of the top exporters of cotton in recent years. Country has achieved significant quantitative increase in cotton production. After the launch of special schemes like intensive cotton production programmes through successive five-year plans. The Technology Mission on Cotton by Government of India launched in February 2000 have helped in increasing yield and production. Per hectare yield increased from 300 kg/ha in last decade to 554 kg/ha in cotton season 2007-08.[1] Area under production has increased from 85.76 lakh hectare in 2000-01 to 121.78 lakh hectare in 2011-12 having a compounded growth of 3.2 per cent and the same for yield per hectare is 5.3 per cent. However the compounded growth for production of cotton bales was highest of 8.8 per cent. With growing production the country's export is also growing.

LITERATURE REVIEWE AND OBJECTIVES OF THE STUDY

Ramamurthy et al (1996)[2] Kehar Singh et al (2003)[3] uses the time series data of export value and export quantum obtained from FAO website. Using composite index methods the study finds that cotton waste has positive prospects in the international market. The share of cotton export is changing in the study period. Prakash et al (1995)[4] examine the impact of new economic policy on agricultural exports. The literature reveals that cotton waste have positive prospects. On the basis of reviewed literature the study focuses on the analysis the global competitiveness of cotton export of India.

DATABASE AND METHODOLOGY

The study is based on time series data from 1993 to 2011 related to value of India's cotton export (US $) as per 2 digit Harmonized System (HS) classification was collected from electronic data base Food and Agricultural Organization's TRADESTAT and Balance of payment published by Centre for Monitoring Indian Economy.

CONSTANT MARKET SHARE ANALYSIS

The method chosen in this study is based on Fredrik et al (2006)[5]. The shift share analysis is always based on the assumption that a country's share of exports in world imports should be constant. If the share in world imports changes, there is a difference between the constant market share norm and the actual export performance. The actual export performance could then be decomposed into four components: (i) a market share effect, (ii) a commodity composition effect, (iii) a market distribution effect and (iv) a competitiveness effect. For describing India's cotton export decomposition, we need following variables:

V_i is value of India's exports of cotton in period 1 and V'_i in period 2. V^j is value of India's agricultural exports to continent j in period 1 and V'^j in period 2. V_{ij} is value of India's exports of cotton to continent j in period 1 and V'_{ij} in period 2. r is percentage increase in world exports of agriculture from period 1 to period 2. r_i is percentage increase in world exports of cotton from period 1 to period 2; r_{ij} is percentage increase in world exports of cotton to continent j from period 1 to period 2. ΔXc is absolute change in India's agricultural exports between period 1 and period 2. For period 1 the value of India's agricultural exports is and . is value of India's agricultural export to continent j respectively. and are the total export of cotton and total export to continent j in period 2 respectively. is the value of India's agricultural exports to continent j in period 2 In addition, the value of India's agricultural exports in period 1 is given by – .Where V.. is total value of agricultural export of India which is arrived at by summation of value of India's exports of cotton in period 1 or it is equal to the summation of value of India's agricultural exports to continent j in period 1. This can also be written as . Similarly, it can also be written for period 2 as .Where V'.. is total value of agricultural export of India which is arrived at by summation of value of India's exports of cotton in period 2 or it is equal to the summation of value of India's agricultural exports to continent j in period 2. This can also be written as . Assuming that exports are completely undifferentiated with respect to commodity and region of destination, when applying the shift share norm, we get $V'..-V..\equiv \Delta Xc\equiv rV..+(V'..-V..-rV..)$. Where, $(V'..-V..-rV..)$is unexplained residual.

$V'..-V..$is the difference in the total value of agricultural export of India between period 2 and period 1. This difference is approximately equal to ΔXc i.e., $(rV..+(V'..-V..-rV..)$. If India maintained its market share, then exports would increase by rV..and the growth in exports could be divided into one part associated with general increase (shown by $rV..$) in world exports and an unexplained residual, which is called the competitiveness effect. A positive competitiveness could be attributed to a decrease in India's relative export price while a negative competitiveness likewise could be attributed to an increase in the India's relative export price. On the basis of the above given identities, complete decomposition is shown as $V'_{ij}-V_{ij}\equiv r_{ij}V_{ij}+(V'_{ij}-V_{ij}-r_{ij}V_{ij})$, wherein we consider exports to differ not only with respect to cotton, but also with respect to destinations. The argument for the latter division is to take into account that India might have easy access to fast growing countries through historical patterns, geographic proximity or trade agreements while it may not have similar access to other countries. here, $(V'_{ij}-V_{ij}-r_{ij}V_{ij})$ is unexplained residual. The growth of India's export divided into a part associated with the general increase in world export and an unexplained residual, at an aggregated level, is equal to:

$\Delta Xc \equiv$ (1)

The total change in India's exports, ΔXc in Equation (1) can be decomposed into four components. They are

(1) is the general rise in world export or Market share effect (MS)

(2) $\Sigma_i(r_{i-}r)V_i$is the commodity composition of India's exports in period 1 (CC)

(3) $\Sigma_i\Sigma_j(r_{ij}-r_i)V_{ij}$is market distribution of India's export (MD) , and

(4) $\Sigma_i\Sigma_j(V'_{ij}-V_{ij}-r_{ij}V_{ij})$ is the residual reflecting the difference between actual export growth and growth that would have occured if India would have maintained its share of export of each commodity to each continent (CE).

The first three effects i.e., MS, CC and MD represent the growth of exports which would result if the country maintains constant market share in each market. These three effects are jointly referred to as structural term. The fourth effect, the competitiveness effect, may be considered as an unexplained residual. It captures the effect of changing

market shares. If the value of CC is negative, then the country grows slower than it should have given the constant market share norm. If the value of CC is positive, the country grows faster than it would have given the constant market share norm. This implies that although the market share effect might imply that the country grows faster than the world and that it is increasing its market shares, it might still grow slower than it should have had it maintained its market shares in all markets for all commodities. Thus, a country might display a negative competitiveness despite having increased its world market shares. The relative values are calculated by dividing the absolute effects by the actual changes in exports of commodities.

RESULTS AND DISCUSSION

India ranked eighth in production of cotton lint in the world in 2011. In the same year export of cotton lint, cotton linter was second in the world and ranking 4th in export of cotton waste. An examination of the growth in cotton export from India in Table 1 reveals that there is high amount of instability in cotton export all throughout the study period. The actual change in export is showing positive trend only after 2002. Out of 18 years the growth is negative for 8 years. Only for 1996-1997, 1997-1998, 1999-2000 and 2000-2001, 2005 to 2010 and 2010-11 it is positive.

Table 1: Result of Shift Share Analysis of Cotton Export of India

Year	ΔXc (Value in Mn $)	Relative Effect (Values in Per cent)			
From To		MS	CC	MD	CE
1994 - 1995	-15.4	-6295.9	13238.2	5267.6	-12109.9
1995 - 1996	-9.7	9186.3	6527.5	19405.0	-35018.8
1996 - 1997	68.3	1653.1	1476.6	1162.7	-4192.4
1997 - 1998	-118.8	-1653.6	-1564.2	-348.9	3666.7
1998 - 1999	108.1	204.5	-450.7	-375.0	721.2
1999 - 2000	231.6	-192.2	-48.6	36.8	304.0
2000 - 2001	-209.9	593.3	2798.1	605.1	-3896.6
2001 - 2002	-137.0	273.2	2595.9	-211.1	-2558.0
2002 - 2003	-15.9	252.3	-535.4	-356.7	739.8
2003 - 2004	13.1	407.4	-435.4	253.2	-125.3
2004 - 2005	-29.3	-413.3	3573.4	7.8	-3068.0
2005 - 2006	49.8	269.6	152.6	27.9	-350.1
2006 - 2007	118.3	636.4	711.3	306.4	-1554.1
2007 - 2008	57.1	1899.2	-3424.4	2010.1	-384.9
2008 - 2009	594.7	340.0	208.9	105.9	-554.8
2009 - 2010	733.3	1913.2	-2273.3	-71.1	531.2
2010 - 2011	-938.4	-5608.3	5561.3	313.7	-166.6
2011 - 2012	1388.7	-592.4	-2490.2	-222.0	3404.6

Note: MS - Market share Effect, CC - Commodity Composition Effect, MD - Market Distribution Effect, CE – Competitiveness Effect.

Source:Researcher's calculation based on the data collected from various issues of CMIE's publication on Foreign Trade and Balance of Payment and FAO's TRADESTAT

Decomposition of growth of export market share, commodity composition and market distribution does not reveal any particular trend. The relative values of market share are positive for most of the years and the values are less than 100 per cent, which indicate that during the years when there are positive values of actual growth, Indian cotton export has experienced higher growth as compared to the world export of cotton.For improving the competitiveness of Indian cotton it is necessary that the productivity per hectare must increase from present level of 1.2 tonnes per hectare. Not only the productivity, but also there is need for increasing area under superior and productive varieties and irrigation. Technology Mission on cotton is contributing towards higher productivity and competitiveness. More intensified efforts are need. For 1996-1997 all MS, CC and MD values are positive but the corresponding competitiveness effect is negative. Growth in this year is affected by the competitiveness effect. Most of the values of CC are greater than zero, thus is for the years when there is positive change in cotton export India.

Market distribution effect for most of the years is above zero. Indicating Indian cotton export to some extent was concentrated on those markets which grew faster during this period especially in the year 2006-2007. Better performance in 2009-10 due to market share effect. CE% of 531.2 million USD reveals that the value is greater than 0 hence India has the competitive effect during this year. The growth in cotton export is largely due to market share followed by market distribution. The commodity suffers on account of commodity composition. There is a need for improving the quality by covering more states and districts under modern ginning factories. For this, intensive monitoring of quality will have to be done.

CONCLUSIONS

From nowhere in last decade India has achieved the position of one of the top producers and exporters of cotton. Competitiveness of cotton is increasing mainly due to market share effect. Thus the growing world demand for cotton has worked positively for India. However there is a need to improve the export infrastructure and prepare a market specific policy and guide the exporters accordingly.

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