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## REVEALED COMPARATIVE ADVANTAGE : A TOOL FOR MEASURING EXPORT POTENTIAL OF SILK SECTOR OF INDIA

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### Abstract

Measures of revealed comparative advantage (RCA) have been used to help assess a country's export potential. Trade performance was developed by Balassa based on the concept of revealed comparative advantage (RCA). The RCA indicates whether a country is in the process of extending the products in which it has a trade potential, as opposed to situations in which the number of products that can be competitively exported is static. It can also provide useful information about potential trade prospects with new partners. Countries with similar RCA profiles are unlikely to have high bilateral trade intensities unless intra industry trade is involved.

Keyword: Comparative advantage, Export potential, Cost , Silk export, Export market , Globalization

### I. Introduction:

The revealed comparative advantage (RCA) model is a widely used tool for analyzing a country's export potential in a particular product or sector. The model was first proposed by economists Balassa and Vollrath and is widely used today in international trade analysis. The model analyzes a country's comparative advantage using trade statistics such as the value of its exports and imports relative to what is being traded in other countries. The model helps assess a country's potential for export success in a given sector or product. It can also be used to compare the relative strengths and weaknesses of a country's trade performance. For instance, it can be used to identify countries with a strong competitive advantage in certain export sectors. Additionally, the model can provide insights into potential opportunities for export diversification.

RCA measures, if estimated at high levels of products disaggregation, can focus attention on other nontraditional products that might be successfully exported. Vollrath offered three alternative specifications of revealed comparative advantage. Burange and Chaddha used the RCA index to measure the competitiveness of India's merchandise trade over a 10-year period from 1996 to 2005 and concluded that though India enjoys comparative advantage in some product, relative competitiveness in the world market is not attained. Raghuramapatruni pointed out that India's RCA indices are true determinants of country's export potential although relative competitiveness is not revealed because of high volume import of corresponding product and some other related issues including trade negotiations. In that case, the vital point to judge is whether the product component is worth in the trading business or not. Shift share analysis is used to see whether an exportable item has net positive share in the trade. The basic Gravity model of Trade (GMT) is based on economic sizes and the distance between two economies.. It states that the volume of trade between two economies is directly related to the product of national incomes but inversely related to the distance between the trading partners. The paper will study the export potential of silk sector of India by using RCA model.

## II. Objectives of the study:

The main objectives of the study are

- i. To measure the competitiveness of silk industry of India
- ii. To identify the export potential of silk items of India
- iii. To access the trend of silk export in globalization era

## III. Data Source and Methodology:

### A. Data Source

The period of study is 1991-2013, Starting period of 1991 is selected because of the Indian Government's initiation of structural change of the economy through liberalization. The study entails both primary and secondary data

For the secondary information, following database are used

- (a) UNCTAD Database
- (b) Export-Import Data Bank, Version 7.2 (TRADESTAT)
- (c) DGCI & S Database
- (d) Central Silk Board Publication

## B. Methodology

The present study aims at exploring export potential of silk items of India through RCA model. The model is used to judge the capacity of the

The revealed comparative advantage (RCA) model is a widely used method to measure a country's export potential. RCA provides insights into a country's comparative strength in producing goods and services that it can sell in the global market. The methods used in the study of export potential of silk sector through RCA are

1. Data Collection: To study the export potential, data related to exports and imports of the country under study are collected. National and international trade databases obtained for the purpose.
2. Computing the Revealed Comparative Advantage (RCA): After the required data has been obtained, the RCA index is calculated by dividing the share of a India's silk exports in total world exports by its share in total world production.
3. Identifying Export Opportunities: After computing the RCA index, countries can identify sectors or commodities with the highest potential for export. A high RCA index indicates that the country has a comparative advantage in that sector/commodity and should focus its efforts on growing exports in that sector.

## IV. Revealed Comparative Advantage of Silk Industry of India:

The RCA index of country  $i$  for the product  $j$  is often measured by the product's share in the country's exports in relation to its share in world trade.

$$RCA_{ij} = (X_{ij}/X_{it}) / (X_{wj}/X_{wt}) \quad \text{-----} \quad (1..1)$$

Where  $X$  represent exports,  $i$  is a country,  $j$  is a commodity,  $t$  is a set of commodities and  $w$  is a set of countries. RCA is based on observed trade patterns; it measures a country's exports of a commodity relative to its total exports and to the corresponding export performance of a set of

countries. If  $RCA > 1$ , then a comparative advantage is revealed. Vollrath(1991) offered three alternative specifications of revealed comparative advantage. The first of these measures is the Relative Trade Advantage (RTA), which accounts for imports as well as exports. It is calculated as the difference between Relative Export Advantage (RXA), which equates to the Balassa's index i.e. RCA, and its counterpart, Relative Import Advantage (RMA):

$$RTA = RXA - RMA \quad \text{-----} \quad (1.2)$$

where,  $RXA = RCA$  and

$$RMA = (M_{ij} / M_{it}) / (M_{wj} / M_{wt}) \quad \text{-----} \quad (1.3)$$

where, M represents import.

Thus,

$$RTA = [(X_{ij} / X_{it}) / (X_{wj} / X_{wt})] - [(M_{ij} / M_{it}) / (M_{wj} / M_{wt})] \text{-----} (1.4)$$

Vollrath's second measure is simply the logarithm of the relative export advantage ( $\ln RXA$ ); and his third measure is revealed competitiveness (RC), defined as:

$$RC = \ln RXA - \ln RMA. \quad \text{-----} \quad (1.5)$$

The advantage of expressing these latter two indices in logarithmic form is that they become symmetric through the origin. Positive values of Vollrath's three measures, RTA,  $\ln RXA$  and RC, reveal a comparative/competitive advantage.

**Table 1: Revealed Comparative Advantage of Silk Export of India with respect to world, 1995-2013**

SL No.	YEAR	RCA	RXA	RMA	RTA=RXA-RMA	RC=In RXA-In RMA
1	1995	0.67	0.67	23.29	-22.62	-1.37
2	1996	1.80	1.18	18.22	-17.04	-1.26
3	1997	0.00	0.00	16.44	-16.44	-1.22
4	1998	4.88	4.88	22.48	-17.60	-1.35
5	1999	3.41	3.41	28.02	-24.61	-1.45
6	2000	3.45	3.45	35.14	-31.69	-1.55
7	2001	5.06	5.06	44.84	-39.79	-1.65
8	2002	1.85	1.85	50.54	-48.68	-1.70
9	2003	1.09	1.09	45.46	-44.37	-1.66
10	2004	0.81	0.81	39.95	-39.14	-1.60
11	2005	2.18	2.18	33.42	-31.24	-1.52
12	2006	2.34	2.34	21.44	-19.10	-1.33
13	2007	1.09	1.09	26.11	-25.02	-1.42
14	2008	0.62	0.62	21.32	-20.70	-1.33
15	2009	1.09	1.09	24.42	-23.33	-1.39
16	2010	1.21	1.21	17.98	-16.77	-1.25
17	2011	1.17	1.17	16.12	-14.94	-1.21
18	2012	1.40	1.40	15.76	-14.36	-1.20
19	2013	2.06	2.06	12.18	-10.12	-1.09

Source: UNCTAD Database

(Product Code SITC -3 digit level)

In Table 1 given above the RCA index at SITC-3 digit level is calculated from 1995 till 2013 for India .The index value calculated by taking into consideration the corresponding export value of silk (at SITC-3 digit level) of India since 1995. Though the study period is from 1991 to 2013, the year 1995 has been taken as starting period because of the fact that after various

negotiations of GATT, member countries agreed under Agreement on Textiles and Clothing (ATC) for a progressive phase out of all the MFA restrictions and other discriminatory measures in a period of 10 years. Under this agreement, first step to phase out MFA restrictions was started in January, 1995 by bringing 16 percent of products under GATT (including removal of quotas). For that 1995 has been considered as a new dawn for textile industry. In the beginning year, the revealed comparative advantage index is 0.67 which signifies that the country does not enjoy comparative advantage in the silk export. However, the country enjoyed comparative advantage in silk export in all the years under study except in 1997, 2004, and 2008 when the Revealed Comparative index was 0.00, 0.81 and 0.62 respectively. In 2001, the country enjoyed the highest value of RCA (5.06) followed by 4.88 in 1998. The RCA in 1999 and 2000 was more or less the same, 3.45 and 3.41 respectively. Similarly, the respective RCA in 2005 and 2006 was 2.18 and 2.34. Between 1998 to 2001 India's silk sector has shown a consistent positive sign in the RCA. This bloomy picture is basically the side effects of India's new outlook towards the textile sector and complete revamp of exportable items of silk sector. The demand of apparel other than fabrics in USA and European Union markets has given boost to our local exporters to add more varieties of locally produced apparel into the export market. In that period, country experienced easy procurement of finances from different financial institutions and the silk exporters of the country have taken advantages of the finances to get bulk orders from the international buyers. Infusion of credit flow augmented the process of product diversification in the readymade garments. Country saw a new breed of entrepreneurs, eager to grab the opportunities of changing situations. In fact possibilities of market expansion due to reduction of MFA restrictions have given a sentimental boost to work more vigorously into silk export. The development of fashion technology and expansion of designing sector have also affected Indian apparel market positively. Apparently, Indian exporters particularly of the readymade garments segment have been able to get more orders from different buyers of the world. After 2001 in all the years except 2004 and 2008 the country experienced comparative advantage but the RCA index are below 3. Economic slowdown of European countries put an onus on India's export market. As a result, silk exporters particularly in the dress materials, made-up and ready-made garments sector, and the domestic traders faced lots of losses because of the failure of the

importers to materialize the demand. However, after the onslaught, the market started gradually picking up.

Balassa's RCA model is modified by Vollrath to make the index more comprehensive for the analysis. First he termed Balassa's RCA as RXA (Revealed Export Advantage) because it takes into account, export variables only. Until the amount of import of product and total import are not taken for analysis, revealed advantage cannot be measured. So the index of RMA (Revealed Import Advantage) is introduced. In RMA calculations, M stands for imports. But contrary to RXA, RMA is revealed if  $RMA < 1$ . RMA less than 1 signifies that the country has more imports of the particular product than the export i.e. there is a trade imbalance in the sector. Interestingly, in India the RMA value throughout the study period is higher than unity. The last column of the above table has shown the relative competitiveness (RC) of India's silk at SITC-3 digit level. RC is arrived after taking logarithm value of RXA and RMA. Negative value signifies negative revealed competitiveness. From the above table it is seen that India, clearly, does not enjoy competitiveness in the silk business. This is a unique situation i.e. though country enjoys comparative export advantage on the one hand, yet at the same time, does not enjoy competitiveness in the business. Umesh et al. pointed out that India's RCA indices are true determinants of country's export potential although relative competitiveness is not revealed because of high volume import of corresponding product and some other related issues including trade negotiations. In that case, the vital point to judge is whether the product component is worth in the trading business or not. Share of the exportable product must be positive over a period of time to capture market of partner country. Shift share analysis (Huff and Sher, 1967) can be used to see whether an exportable item has net positive share in the trade.

## **V. Conclusion:**

At the initial period the country did not enjoy comparative advantage in the export of silk. However, rest of the years excepting 1997, 2004, and 2008 the country showed remarkable comparative advantage. Although India reveals comparative advantage in export but in terms of competitiveness the study reveals negative values which signify lack of competitiveness. The Shift share analysis was done to see whether an exportable item has net positive share in the

trade. Both mulberry, with few exceptions and non mulberry are found to have a positive net shift. Along with this silk waste group is also found to have positive net shift. The three major segments of non mulberry silk i.e. muga, tasar and eri, have shown a positive net shift. Mixed and blended group has shown negative net shift in the major heads. Cocoons though have not shown any negative net shift, miniscule trade share has made the group irrelevant in the analysis. There is a positive correlation between GDP and export as Gravity model of trade suggests.

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