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A Study on Variation in Comparative Advantage in Trade between China and India

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Abstract:

This Paper investigates the comparative advantage of India & China and how this has changed over the period of 2002-2012. Comparative advantage has been tested using Revealed comparative Advantage (RCA). Export Products are analyzed based on Standard International Trade Classification (SITC) revision 1, which divide total export into ten groups. It has been found that in some commodities RCA remained stable throughout the study period whereas in some commodities there has been large variation. In some commodity groups India and China complement each other whereas in some commodities they are competing they are competing with each other in the World market. The analysis can be applied to guide policy makers in their evaluation of trade and industrial policies

Key words: Revealed Comparative Advantage (RCA), International Trade, China and India

JEL Classification: F14

1. Introduction

Trade volume between India and China are improving fast which can be seen through growing trade ties between two countries. Trade volume has increased more than ten times in last ten years. Significance of these two countries has been increasing in the world which is attracting attention of many researchers. China has already become the largest partner of India in 2008-09 surpassing USA. Both the countries are taking important steps towards opening their market for the world as well as each other ; China initiated its market reform in 1978 and shifted from centrally planned economy to market based economy, Whereas India took the initiative of opening its economy in 1991 through adopting LPG¹ measures. These reforms resulted in rapid economic growth in both the countries.

Improvement in trade in these two countries with world as well as among themselves is result of many crucial steps taken by these countries, some of them are signing a trade agreement in 1984 which has given them status of Most Favored Nation Treatment and in 1994, the two countries signed an agreement to avoid double taxation. India as well as China has maintained close consultation and coordination in the UN², WTO³, G-20 and BRICS⁴ and on many major international and regional issues. India is member of WTO since its formation i.e. 1995 though China has recently become its member in 2001. It is therefore expected that it would have an impact on composition of export which reflects in comparative advantage of the country. The present study was undertaken with the specific objective of comparing the structure of comparative advantage enjoyed by India and China in the global market for the period since China Joined WTO i.e. 2002-2012.

Objective of this paper is to analyze the pattern of comparative advantage for India and China in the world market and to find out is there any variation in the comparative advantage over the time period of ten year i.e. from 2002-2012. Whether India and China are competing or complementing each other in various sectors.

2. Data and Methodology

Comparative advantage is more than 200 year old concept, in theoretical models, comparative advantage is expressed in terms of relative prices evaluated in the absence of trade. Since prices are not expressed in practice, we measure comparative advantage indirectly. Revealed Comparative Advantage (RCA) use trade pattern to identify the sector in which an economy has comparative

¹ Liberalization, Privatization and Globalization

² United Nation

³ World Trade Organization

⁴ An Economic cooperation among the countries of Brazil, Russia, India, China and South Africa

advantage, by comparing the country of interest' trade profile with the world average. Balassa developed this measure of comparative advantage in 1965 which was originally introduced by Liesner in 1958. It is used to capture the degree of trade specialization of a country.

The RCA index is defined as the ratio of two shares. The numerator is the share of a country's total exports of the commodity of interest in its total exports. The denominator is share of world exports of the same commodity in total world exports (Laursen 1998).

$$RCA_{kj} = \frac{X_k^j / \sum_k X_k^j}{\sum_j X_k^j / \sum_k \sum_j X_k^j}$$

K is an industrial index while j is a country index, X is export. It takes a value between 0 and $+\infty$. A country is said to have a revealed comparative advantage if the value exceeds unity. Export Products are analyzed based on Standard International Trade Classification (SITC) revision 1, which divide total export into ten groups of Products. This classification is used to obtain long time-series. SITC has maintained a 5-column classification structure and the first column, "Section," still includes ten articles, as in the original. SITC Rev. 1 included 10, 56, 177, 625, and 1312 articles, respectively, in the Section, Division, Group, Subgroup, and Item classifications. The ten Section items are: 0.Food and live animals 1.Beverrages and tobacco 2.Crude materials, inedible, except fuels 3.Mineral Fuels, lubricants and related materials 4.Animal and vegetable oils and fats 5.Chemicals 6.Manufactured goods classified chiefly by material 7.Machinery and transport equipment 8.Miscellaneous manufactured articles 9.Commodities and transactions not classified according to kind. The time for the investigation is chosen as 2002-2012. The reason is as follow. Following Chinas Accession to WTO in 2001, it reduced tariff and non-tariff trade barriers. These liberalization measures had significant effect on Chinas structure of trade, How this going to effect the comparative advantage of China and its effect on comparative advantage of India is to be analyzed. For this we have taken time period of 2002-2012.

3. Result and Discussion

3.1. Animal and Vegetable oils and Fats

The result presented in figure 1 clearly depict that India experienced a comparative disadvantage in export of Animal and vegetable oils and fats in all the years under consideration. The RCA estimate for the year 2002 was .86 which points towards a quite unfavorable status of Indian Animal and vegetable oils and fats exports in the global market. The situation has further deteriorated over the years, and RCA value was 0.54 even during 2012. China also had pass through a similar condition with its RCA values well below one for all the years under consideration. Given the current status, considerable efforts are needed to make India a competitive exporter of Animal and vegetable oils and fats in future.

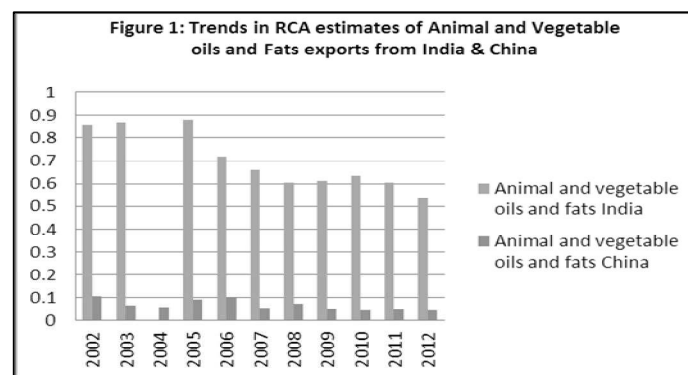


Figure 1

3.2. Beverages and Tobacco

India's RCA for Beverages and tobacco exports has always stayed below unity, which suggests that Beverages and tobacco exports have remained low and not gained a larger share in world exports (relative to total exports). A similar pattern has been observed in case of China also; the RCA values of Beverages and tobacco exports in China were even lower than India throughout the study period.

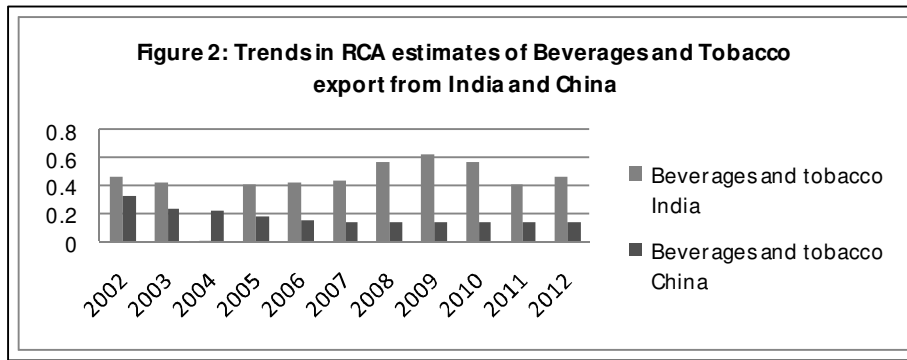


Figure 2

3.3. Chemicals

India performs better as they have higher RCAs in almost all the years under study and are thus more competitive than China's export. The RCA for India's chemical exports has remained considerably above unity indicating that this is a competitive export item for India. Chemical Industry is one of the oldest industries in India. Volume of Production in chemical industry positions India as third largest producer in Asia (Next to China and Japan). Demand for chemical is growing in Asia, particularly china and India. China's comparative disadvantage because most of the local companies in china are not yet in a position to expand globally. Most of their activity is limited to domestic investment with other local companies

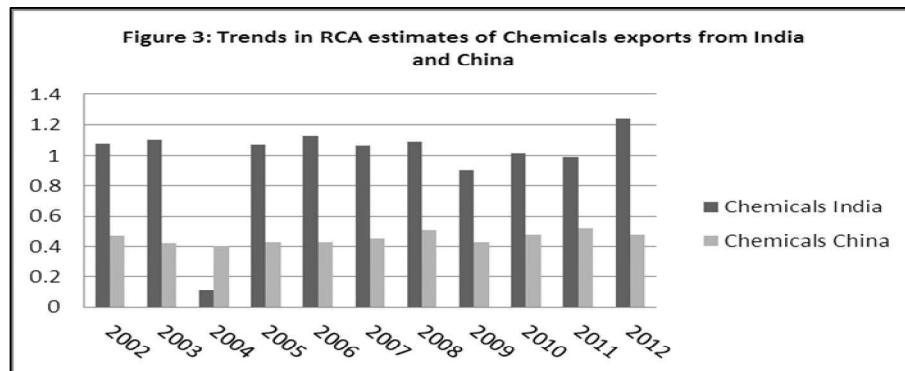


Figure 3

3.4. Commodity and Transaction

India's comparative advantage in export of commodity and transaction seemed to dwindle during the study period. In 2002 India was at comparative disadvantage with RCA value .64 but period which followed witnesses India gaining its advantage with an RCA of 1.03 in 2009 and 1.39 in 2011. However it reversed in 2012 with an RCA of 0.27; whereas, China was at comparative disadvantage throughout the study period.

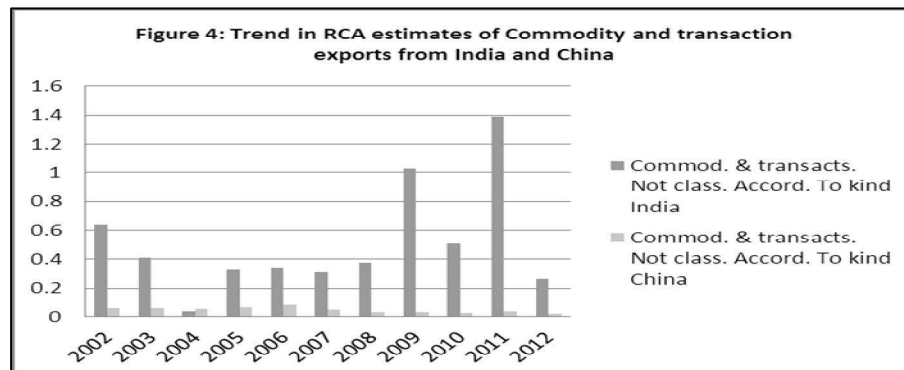


Figure 4

3.5. Crude Materials, Inedibles Except Fuel

The RCA of product group Crude materials, inedible, except fuels indicated the existence of trade specialization advantage for India, while China was in condition of disadvantage throughout the period of study. RCA value has remained considerably above one for India in a consistent way whereas for China RCA values were not only below one but decreasing too.

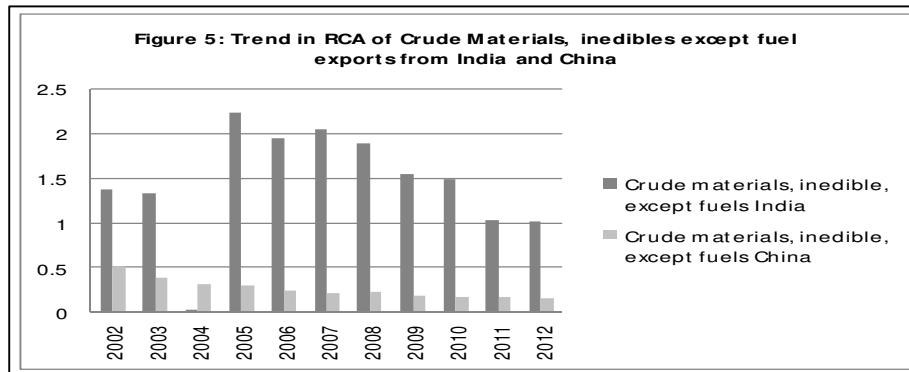


Figure 5

3.6. Food And Live Animals

A brief perusal of the RCA estimates presented in figure 6 reveals the comparative advantage of India and China in Food and live animals. Indian Food and live animal exports showed varying level comparative advantage in different years of the study period. Food export consist of major part of India's total export, in 2012 it accounted for 11% of India's total export whereas for China it was only 3% of total export. India is one of the largest producers of livestock products; it has potential to further expand its export of livestock. The liberalization policy initiatives taken have also been important factor in increasing the export of livestock products. China has remained at disadvantage throughout the study period.

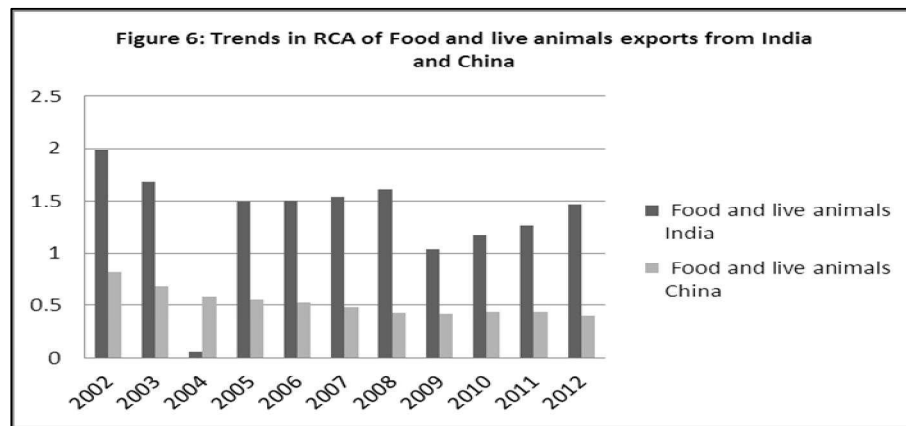


Figure 6

3.7. Machinery and Transport Equipment

Among the traded goods, machinery and transport equipment is the leading of both china's export and Import. China maintained its comparative advantage on machinery and transport equipment in the period 2004-2012. Throughout the study period the study period India's RCA values was below one implies that the country has a revealed comparative disadvantage in machinery and transport equipment.. To increase competitiveness of Machinery & Transport Equipment, there is an urgent need for further diversifying India's export basket towards high quality and high technology goods. Exports of Machinery & Transport Equipment may be encouraged through a new policy, motivations and support mechanisms.

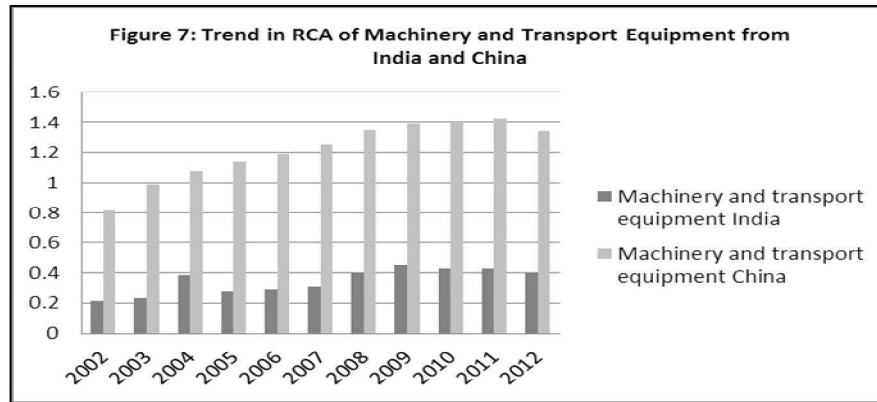


Figure 7

3.8. Manufacturing Good and Transport Equipment

India and China both are having comparative advantage in manufacturing goods. Share of manufacturing in export of both countries has been gradually increasing over the time period. India is different from China in basically two aspects, skill intensity of export and variety of products. Within manufacturing, India has emphasized skill-intensity rather than labor-intensity production (Banerjee 2006; Beretta and Targetti Lenti 2011) whereas China has steadily absorbed labor surplus from rural area and specializing particularly in mass exports of cheap goods.

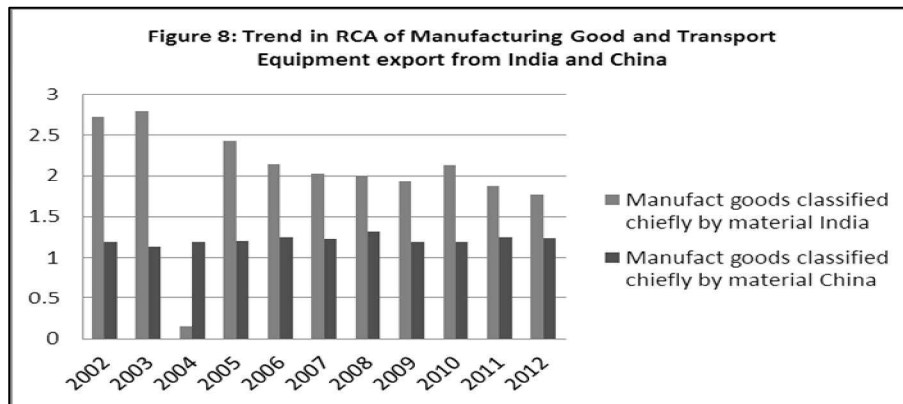


Figure 8

3.9. Mineral Fuels, Lubricants and Related Materials

Minerals and fuels, lubricants and related material's share in India's export to world had been increasing steadily; it was 18.8% in 2012 as compared to 3.41% in 2000. RCA values are also supporting this fact, till 2005 RCA was below one whereas it was above one for almost all the years since 2006. In case of China it had been consistently below one for the whole period of study. This means India has comparative advantage over China in this commodity group.

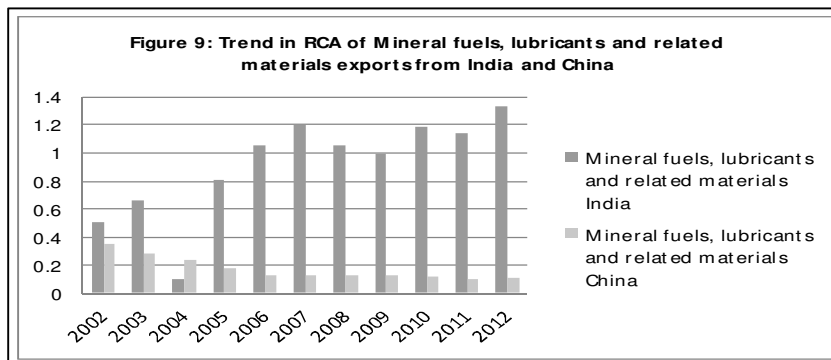


Figure 9

3.10. Miscellaneous Manufactured Articles

Country's comparative is determined by its resource endowments and its cost. Both India and China has huge labor supply and as a result they are having competitiveness in labor-intensive goods. The computed RCA values for India were above one for all the years under consideration except 2004, indicated its comparative advantage. However China was found to have outsmarted India during the study period. For the period 2002-2012, China was found to have a comparative advantage in Miscellaneous manufactured article in all the years of study.

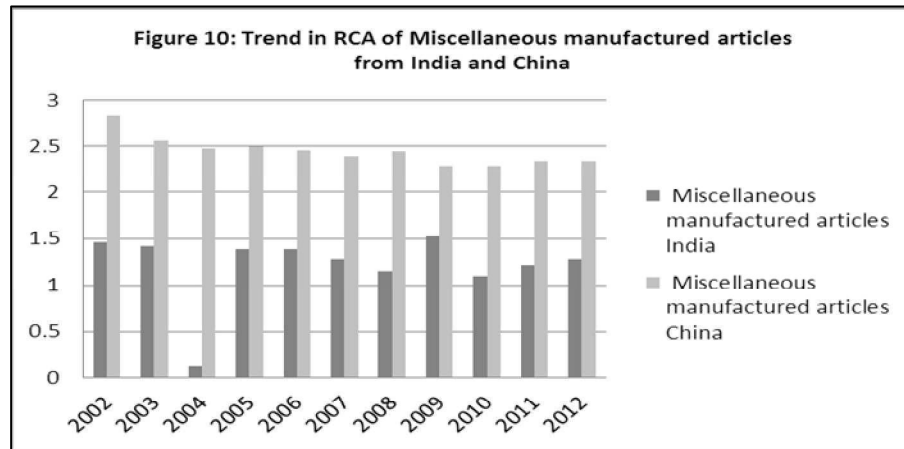


Figure 10

4. Conclusion

Trade among India and China is growing steadily still there is scope of further improvement, as shown by current study. There are many commodities in which India is having comparative advantage as compare to China like Chemicals, Food and live animals, Mineral fuels, lubricants and related material, crude materials, inedible except fuel ; improvement in export of these commodities from India to China is possible. There are also some commodities in which China is having comparative advantage over India like Machinery and transport equipment. In some commodities China and India both are having comparative advantage, so they are basically competing with each other in the world market in these commodities; it includes manufacturing goods, miscellaneous manufactured article. In some commodity group both the countries do not have comparative advantage like Animal and vegetable oil fats, commodity and transactions, beverages and tobacco. For most of the commodities RCA has been stable throughout the period of study, there are very few commodities in which there was large variation within the time period. "As regards manufacturing development, China could offer a model for India to follow. China can learn How to develop a strong service sector from India" (Beretta, Lenti 2012). However, these conclusions are based on calculation at highly aggregated level, individual commodities RCA may differ from there group RCA. Results need to be revised if we calculate RCA at a more disaggregated level.

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