

Revealed Comparative Advantage of India's Rice Export with Selected Countries (A Case Study)

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Abstract

India is one of the largest producers of Rice. Huge demand of Rice in global market gave India a good environment to export the surplus production. Today India is the leading exporter of rice to global market and enjoys the comparative advantage in rice export. Rice plays an important role in export earnings of the India.

In this paper an attempt is made to highlight rice export performance of India during 2010-11 to 2014-15. It also focuses on future prospects of rice export and suggestions to improve the performance. This paper also analyzes Trend, Direction and growth of export from India. To find out export competitiveness among major global rice exporter, RCA (Revealed Comparative Advantage) Index is applied which was propounded by Balassa and known as Balassa's Index.

JEL Classification : F13, F14

Keywords: Revealed Comparative Advantage, Rice Export, International Trade, Balassa's Index, Export performance

Introduction

Indian economy is heavily dependent on agriculture. Rice exports account for a fifth of India's total food and agriculture exports. In recent years India has emerged as a biggest rice exporter and enjoys comparative advantage in rice export. Rice is the staple diet for almost half of the global population. Over 90% of the global rice output and consumption is centered in Asia. China and India both are the world's largest producers and biggest consumers. India accounts for over 70% of the World's basmati rice output, which is small portion of the total rice produced in India.

Objectives of Research Paper

- To analyze the India's rice export performance.
- To examine India's rice export competitiveness with the major competitors by the help of RCA Index.

Review of Literature

Saiful Islam & Parag Jafar Siddique (2014), in their study "Revealed Comparative Advantage of Bangladeshi Leather Industry with Selected Asian Economies", analyzed the comparative advantage of Bangladeshi leather industry with India, Pakistan and China with the help of Balassa's RCA Index. The author reported that Bangladesh has a potentiality to expand his leather industry.

Amita Batra & Zeba Khan (2005), “Revealed Comparative Advantage: An analysis for India and China” analyzed the pattern of comparative advantage for India and China in the world market. The researchers provided the detailed information regarding the India and China’s top performing sectors and commodities. Study revealed that both India and China enjoy comparative advantage for labor and resource intensive sectors in the world market.

Gurpreet Kaur & Jasdeep Kaur Dhami (2013), “Export Performance of Agro Based Industries in Punjab : A Special Reference to Rice Industry” highlighted Punjab’s role in India’s rice export and provides the evidence through comparative analysis. The study emphasized on Punjab’s contribution in rice export of India. Authors also evaluated government’s schemes to boost the rice production in state of Punjab.

Bushra Yasmin & Saba Altaf (2014), “Revealed Comparative Advantage of Carpets and Textile Floor Covering Industry in Pakistan, India and China” compared the competitiveness of Pakistan’s textile floor covering industry with other selected countries. The finding of the study implies that a favorable potential exists for higher growth of the carpet industry. Authors analyze the comparative advantage of the carpet industry in Pakistan and compare it with India and China. The result suggested that Pakistan enjoys a comparative advantage at 2 digit level of classification during the period of study except 2002. The study also suggests policy implications to improve the competitiveness of carpet industry in Pakistan.

Balassa (1965) used an index “RCA (Revealed Comparative Advantage)” to measure the trade competitiveness among various countries. Since then, It has changed several times (Balassa 1977, 1979 and 1986). He used trade data to compute the RCA index. The Balassa index can easily identify a country has revealed comparative advantage or not. The formula he defined as a commodity share in total national export divided by its share in total world export. The RCA value of a commodity that is greater than unity indicates that a particular commodity has comparative advantage in exporting it to the world. If the value is less than unity, it indicates comparative disadvantage in exporting that commodity to the world. RCA has been

widely used to analyze the changes in trading patterns.

4. Methodology

RCA Originally RCA index was developed by Balassa in 1965. Measures of revealed comparative advantage (RCA) help to assess a country’s export potential. It indicates particular country’s comparative advantage or comparative disadvantage in different commodities and sectors. It can also give information about potential trade prospects with new countries. Countries with similar RCA profiles are unlikely to have high bilateral trade intensities unless intraindustry trade is involved. The RCA Index is calculated as follows:-

$$RCA_{ij} = (X_{ij} / X_{it}) / (X_{wj} / X_{wt})$$

X_{ij} - values of country i’s exports of product j,

X_{wj} - world exports of product j,

X_{it} - country i’s total exports,

X_{wt} -world total exports.

If RCA value is less than unity ($RCA < 1$), it indicates that country has a revealed comparative disadvantage in that commodity or sector. Similarly, if RCA value is more than unity ($RCA > 1$), that means country has revealed comparative advantage in that commodity or sector.

Rice Production in India

India is largely self-sufficient in rice production. India is the second largest producer of rice in the world. The Indian government implemented several policies to boost rice production. Numerous subsidies, ranging from fertilizer to irrigation, electricity, seeds, machinery, and food, are available. The government subsidizes agricultural inputs to keep farm costs low and increase production. Irrigation and electricity are supplied directly to farmers at below production costs due to these efforts the country's rice production has increased to 105.48 MT in 2014-15 from 95.8 MT in 2010-11. The major rice-growing states are West Bengal, Uttar Pradesh, Andhra Pradesh, Punjab, Tamil Nadu, Orissa, Bihar, and Chhattisgarh, which together contribute about 72% of the total rice area and 75% of total rice production in the country.

Table 1
Rice Production in India

Year	Million tones
2010-11	95.8
2011-12	105.3
2012-13	105.24
2013-14	106.65
2014-15	105.48

Source : Agriculture Statistics Division
Department of Agriculture, Cooperation and Farmers welfare

Based on India's agriculture statistics, the three largest rice-producing states are West Bengal, Andhra Pradesh, and Uttar Pradesh. These states contribute over one third of the

country's total rice production.

India's Share in global Rice Export

Table 2
India's share in global rice export (In Kgs)

Years	Rice Export of India	World's Total Rice Export	India's Share
2010-11	4,966,160	40,559,807	12.24
2011-12	10,569,565	**	**
2012-13	11,387,082	40,719,237	27.96
2013-14	11,162,015	44,102,083	25.31
2014-15	11,025,080	37,398,855	29.48

Sources: ITC calculations based on UN COMTRADE statistics. ** N.A.

As we can see that India's share in global export of rice is increasing year by year. In 2014-15 India's share in global rice export was nearly 30%. Today India is the top in the list of world rice exporter. India's share has sharply increased with 12% to 30% in last five years. Although little bit decline has been reported in 2014-15 in quantity exported but

overall growth rate has also been raised. The above table clearly shows that India's share is very high in global rice export; total rice exported 11025080 kg by India in 2014-15 that is nearly one third of world's total rice export.

RCA in Export of Rice

Table 3
India's RCA in Rice Export

Years	Rice Export of India	Total Export of India	Rice Export of World	Total Export of World	India Rice Export RCA
2010-11	4073331	301483250	24037958	18223780065	10.2430
2011-12	6127952	289564769	23930810	18461735539	16.3262
2012-13	8169519	336611389	25400355	18925086844	18.0828
2013-14	7905650	317544642	25992814	18986152033	18.1851
2014-15	6380082	264381004	20048339	16329281326	19.6555

Sources: ITC calculations based on UN COMTRADE statistics.

India enjoys revealed comparative advantage in rice export and its increasing constantly. In the year 2010-11 India's RCA index was measured 10.24 and now in 2014-15 it jumps to 19.65 which clearly show the India's comparative

advantage in rice export.

India's rice export competitiveness with selected countries:-

Table 4
Main Rice Exporter's RCA Index

Years	India Rice Export RCA	Thailand Rice Export RCA	US Rice Export RCA	Vietnam Rice Export RCA
2010-11	10.2430	21.5601	1.08097	28.6272
2011-12	16.3262	15.5683	1.02291	24.7744
2012-13	18.0828	14.4118	1.03128	16.5131
2013-14	18.1851	17.4569	0.89844	14.281
2014-15	19.6555	17.5504	1.11888	6.33642

Sources: ITC calculations based on UN COMTRADE statistics.

If we see the above table that clearly shows that structure of global rice trade is very competitive. Main rice exporters are India, Thailand, US and Vietnam. Currently India is the leading exporter of rice with very high RCA i.e. 19.65 calculated on the basis of global rice trade data obtained in 2014-15. RCA Index of the India remained more than 10

during the last five years. All other competitor are now behind from India in rice export, earlier Thailand and Vietnam were ahead but now India has surpassed the both. In the year 2010-11 Thailand's RCA in global rice export was 21.56 but now it's declined to 17.55 and India's RCA Index has raised that was 10.24 earlier in 2010-11, that is now

19.65. Vietnam is also losing its share in global rice export tremendously. Vietnam's RCA Index was calculated 28.62 in 2010-11 which has sharply declined and now it's just 6.33. The other competitor in global rice export is United States. The United States has not much perform well and its comparative advantage in last five years has not been very significant, the data reveals that only in the year 2013-14 it was showing comparative disadvantage in United State's global rice export competitiveness. The analysis reveals that the India has revealed comparative advantage in rice export. The RCA index ratio for Indian rice is extremely high, revealing export competitiveness it is obvious that India have comparative advantage in rice due to its strategic position and its peoples living in importing countries.

India's Export of Rice to Major Markets

Basmati Rice: - India is the leading exporter of the Basmati Rice to the global market. Basmati rice fetches good export price in the international market for its three distinct qualities i.e., pleasant aroma, super fine grains and extreme grain elongation. Basmati rice is a high foreign exchange earner compared to Non-Basmati rice as it has always fetched higher export prices. Its export prices are about 3 times higher than that of Non-Basmati. The overall trend growth rate of Basmati export has shown in below table with top importing countries.

Qty In MT; Value in US\$ Mill

Table 5
Basmati Rice Export from India

Product: Basmati Rice

Importing Countries	2010-11		2011-12		2012-13		2013-14		2014-15	
	Qty	US\$ Mill								
Saudi Arab	623666	688.56	721245	704.82	681193	672.64	826119	1108.9	966931	1188.23
Iran	452542	446.2	614645	594.94	1082219	1187.23	1440454	1834.55	935568	1108.5
U Arab Emts	625582	623.56	726901	720.31	234640	240.42	147903	196.51	278601	314.76
Iraq	36981	36.36	151964	137.55	204266	196.73	219605	271.14	235448	259.13
Kuwait	170068	239.85	199869	283.59	163317	194.73	175537	247.95	166469	250.53
Top 5 Total	1908839	2034.53	2414624	2441.21	2365635	2491.75	2809618	3659.05	2583017	3121.15
Other Countries	421411	459.36	754822	775.78	1094194	1072.29	944484	1205.84	1119267	1397.1
Total	2330250	2493.89	3169446	3216.99	3459829	3564.04	3754102	4864.89	3702284	4518.25
% Share of Top 5 Countries	81.92	81.6	76.18	75.88	68.37	69.92	74.84	75.21	69.77	69.08

Source: DGCIS

India is exporting Basmati Rice to various countries in the world. A total quantity of 37.02 lakh mts basmati rice was exported to different nations from India during 2014-15. In the recent years Saudi Arabia, UAE, Kuwait, Iran and Iraq received about 70-80 per cent of India's Basmati exports. In the Middle-East, export to Saudi Arabia has been the highest (26 per cent) in 2014-15. Saudi Arabia, Kuwait, Iran, Iraq and UAE are the countries, which have been among the top five major Basmati rice importing countries. Incidentally all these countries also have a high Indian population which forms one of the basic demand factors for Basmati rice, the other factor being consumer preference for this particular rice variety.

The above table shows that decline in export by a marginal

1.5 per cent in volume terms to 3.7 million tonnes in 2014-15, as compared to 3.76 mt the previous year registered. In value terms, however, the fall was 7.5 per cent, showing a five per cent fall in average realization. The main reason behind this fall was that Iran bought lesser quantity in 2014-15 due to political reasons. The Saudi Arabia and UAE markets did reasonably well. Saudi Arabia took over from Iran as India's largest destination for basmati rice export in 2014-15. It imported 966,931 M.T. worth \$1,188 million, as compared to 826,289 M.T. valued at \$1,109 million in 2013-14.

Shipment to Iran declined 39 per cent in value terms, to \$1,108 mn (935,568 tonnes) in 2014-15 versus \$1,835 mn (14,40,654 tonnes) the previous year.

Qty in MT; Value in US\$ Mill

Table 6
Non Basmati Rice Export from India

Product: Non-Basmati Rice										
Importing Countries	2010-11		2011-12		2012-13		2013-14		2014-15	
	Qty	US\$ Mill	Qty	US\$ Mill	Qty	US\$ Mill	Qty	US\$ Mill	Qty	US\$ Mill
Bangladesh Pr	5499	2.4	144704	54.37	31334	15.4	662834	250.62	1227665	437.09
Sri Lanka Dsr	8498	3.54	15612	7.21	4109	2.46	5891	3.44	666795	292.58
Benin	1957	0.69	213720	89.72	576546	239.73	1166847	485.17	598569	247.12
Senegal	0	0	333929	116.88	854560	267.9	651984	195.74	765019	226.03
Nepal	27159	9.27	140862	42.29	396586	106.18	406163	119.8	621887	214.31
Top 5 Total	43113	15.9	848827	310.47	1863135	631.67	2893719	1054.77	3879935	1417.13
Other Countries	57568	34.96	3142941	1412.91	4824716	2020.3	4254753	1870.39	4345629	1902.68
Total	100681	50.86	3991768	1723.38	6687851	2651.97	7148472	2925.16	8225564	3319.81
% Share of Top 5 Countries	42.82	31.37	21.26	17.99	27.86	23.83	40.48	36.07	47.17	42.68

Source: DGCIS

Non Basmati Rice: - Any rice other than basmati rice is named as non-basmati rice. Major export destinations for non-basmati rice include Bangladesh and Nepal. African countries like Senegal and Benin are also emerging as the new markets for the India's non-basmati rice. Sri Lanka is also started to import the bulk quantity of non basmati rice from India in 2014-15. It imported 666795 MT of non basmati rice from India in the year 2014-15 and its share accounted for more than 8% of India's total non basmati rice exported which was earlier in the year 2013-14 was just 0.082%. If we analyze the table no. 6 that clearly indicate that except Benin, other top importer's share is increasing year by year. The top in the list, Bangladesh imported 15% of India's total non basmati rice valued \$ 437.09 million in the year 2014-15. Nepal's share is also increasing year by year. Nepal was importing just 27159 MT of non basmati rice from India in 2010-11 and now its imported MT 621887 in 2014-15. Benin's share has declined in 2014-15. Benin imported just MT 598569 of non basmati rice from India in comparison with last year in 2013-14 it imported MT 1166847 of non basmati rice which accounted for the 16% of India's total non basmati rice exported.

Conclusion & Suggestions

The Study concludes that the rice export performance achieved in recent years by India is significant and it has proved by facts and figures that India has the potential to become a biggest rice exporter in global market in years to come. India is giving tough competition to other major rice exporters. As far as global rice export competitiveness is concerned, India is enjoying comparative advantage and India's RCA is higher than other competitors like Thailand, US and Vietnam. However, scope for the rice export is wide and India can improve its current export performance by implementing new steps and initiatives. Indian rice is showing strong export performance during the past years.

Some hurdles have been also reported which are affecting India's Rice Export Performance and some studies have also revealed that the expansion of rice production in the last few years are not sufficient, if India want to perform well in global rice export with internal demand fulfilled then it has to emphasize on production increase. There is need for India to diversify its rice exports across more regions beside Middle East. This export expansion can help India to change its economic structure and export incentive for the country. There is a higher demand anticipated from African countries for rice and India can tap that opportunities to its fullest potential, Government should also take all steps to explore more markets.

One more thing that is affecting India's rice export performance is the use of pesticides over the admissible limits. It is also adversely affecting India's rice export to various markets as it failed to meet with their quality standards. Production, procurement and processing of rice should be well organized for maintaining its quality for export purposes. Export facilities available to the exporters at Sea Port also need review. If the above measures adopts by the government of India and rice export policy changes according to the situation of the global market then we can expect that present trend of growth in the rice export of India will be continue for long period.

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