

# India's Trade with Nigeria: A Competitive Analysis through RCA and RSCA Index



Tawheed Nabi, Tushinder Preet Kaur

**Abstract:** *Nigeria attracts the largest trading partnership from India compared to other African countries which India is a leading trade partner. Nigeria having losing its crude oil export destination to the United States, India stood out as the largest destination of Nigerian crude oil. It was estimated that more than 135 corporations are either owned or operated by Indians in Nigeria. The Revealed Comparative Advantage index (RCA) approach has been used to check the competitiveness of India with Nigeria in all commodities and further with Revealed Symmetric Comparative Advantage (RSCA) the competitiveness has been calculated. India is having Comparative Advantage by exporting four commodities viz; Machinery, Pharmaceutical Products (30), Nuclear Reactors, Mechanical Appliances, Boilers; parts thereof (84), Vehicles other than Railway or Tramway Rolling Stock, and parts and accessories thereof (87), articles of Iron or Steel (73), and mainly with Pharmaceutical goods because of the average value of RCA from the period 2000-01 to 2017-18 is 50 and having a higher positive value of RSCA near to 0.9 so the study has analyzed the Bilateral Trade of India and Nigeria, India is having high Comparative advantage over Nigeria in this trade.*

**Keywords :** Trade; RCA; RSCA; Competitiveness; Bilateral Trade.

## I. INTRODUCTION

Historically the diplomatic relations between India and Nigeria have been deep-rooted, this bring about India to have established its Diplomatic House in Lagos-Nigeria as far back as November 1958, shortly before Nigeria got independence on 1st October 1960. Nigeria attracts the largest trading partnership from India compared to other African countries which India is a leading trade partner. Nigeria having losing its crude oil export destination to the United States, India stood out as the largest destination of Nigerian crude oil. It was estimated that more than 135 corporations are either owned or operated by Indians in Nigeria. Bhagwati Jagdish (2003). There is an estimate of around 50,000 Indian

communities in Nigeria with a CBSE affiliated Indian Language School in Lagos accommodating 2,500 students. Since Nigeria's independence up to the early 1980s, mostly the northern part of the country was educated by Indian teachers, wearing Indian dresses, watching Indian movies, as well as treated by Indian doctors.

There is limited work done concerning India-Nigeria trade. However, some relevant literatures to this study were reviewed from across researches on the mutual trade relations between India- Nigeria, which served as road map upon which will this study is carried out.

## II. REVIEW OF LITERATURE

Grossman and Helpman (1991) gave a provision to the outdated opinions concerning trade liberalization and economic growth. Klein and Shambaugh (2008) valued the association among participation of provincial free trade zone and mutual trade movements. They discovered that, averagely participants of free trade zones have trade movements that are about 50% greater than trading associates which are not part of a free trade zone. Sulaiman B.K (2009) lead a research through historical method and discovered that India- Nigeria trade balance was in favoring Nigeria due to high oil exports to India. Rupa et al; (2010) examined trade perspective of China, India, and five African nations, including Nigeria and the two some wise result of India and Nigeria shown that India has gotten to the peak of its trade prospective with Nigeria in product trade and there is little trade vision shown by gravity model. Jan A. H (2011) recognized a model of energy requests and instances which resulted to a mutual trade relation of India-Nigeria through resource scarce model and it was proven that Nigeria plays an important role in reaching India's energy requests. Rakesh et al; (2012) led a study to define the variations in India's mutual trade with African countries along-side Nigeria, by constant market share analysis model, and the outcome shows that there is increasing trade prospects in pharmaceuticals and in automobile there is growing exports trade prospective but with Nigeria. Rano A. S (2013) lead a research so as to evaluate the effect of income, rate of exchange, and index of plainness on flow of bilateral trade between India and Nigeria by using gravity model. It resulted that all the variables were teamsters of mutual tides for India to the isolation of Nigeria in all the models. Sabyasachi and Nuno (2013) piloted a study by using Gravity Model in examining the influence of common border, cultural juxtaposition, economic size, as well as political globalization of bilateral trade between India and major trading partners,

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Nigeria inclusive and it resulted that both factors are meaningfully and absolutely prompting mutual trade movement between India and its associates. Kabiru and Dillfraz (2014) examined India's trade strength with Nigeria between the period 2001 to 2013, and discovered high trade strength in all the periods. Kaur N. and Sarin V. (2017) measured the Indian export competitiveness vis-a-vis ASEAN countries in case of agriculture products. The data of Indian exports to ASEAN countries have been taken from 2001-15 which shows a little change in the comparative advantage and competitiveness. Further, it shows the lack of diversification and quality improvement in the agriculture export of India towards ASEAN countries, which reflects a myopic policy opinion on the part of Indian exporter or it also clears the role of government in agriculture export. Nabi and Kaur (2013) calculated the export index in the pre and post WTO period and have shown that WTO has had a positive impact on the exports of the country

## RESEARCH OBJECTIVES

1. To analyse the Bilateral Trade between India and Nigeria from Indian Perspective.
2. To identify the trade competitiveness between India and Nigeria.

## RESEARCH METHODOLOGY

The study is based on secondary data extracted from the UN COMTRADE. Variables which are used are; imports and exports and time period of the study is 2000-2001 to 2017-2018. Descriptive statistics was used for the analysis. Balassa's competitive advantage index has been used for the analysis. The calculation of RCA is been done using the formula of RCA in excel.

## REVEALED COMPARATIVE ADVANTAGE INDEX

The comparative advantage index of India and Nigeria in different sectors, have been calculated by using Balassa's Revealed Comparative Advantage (RCA). Balassa's index is calculated as follow:

$$RCA_{jk} = (X_{jk} / X_{jw}) / (X_{kw} / X_{ww})$$

The value of RCA lies from 0 and infinity. A country is said to have a comparative advantage if the value exceeds 1 in that particular commodity. Where;

- $X_{jk}$  = India's export to Nigeria of particular commodity
- $X_{jw}$  = India's export to world of particular commodity
- $X_{kw}$  = world's export to Nigeria of particular commodity
- $X_{ww}$  = world's total export to rest of the world of particular commodity
- $j$  = India
- $k$  = Nigeria
- $w$  = World

RCA value lies between 0 and  $\infty$ . A country is said to have a revealed comparative advantage if the value exceeds 1.

## REVEALED SYMMETRIC COMPARATIVE ADVANTAGE (RSCA)

A problem with the Balassa's index is that its value is asymmetric it varies from one to infinity for products in which a country has a revealed comparative advantage, but only from zero to one for commodities with a comparative disadvantage. Dalum et al (1998) proposed the revealed

symmetric comparative advantage (RSCA) index to alleviate the skewedness problem as follows:

$$RSCA = RCA - 1 / RCA + 1$$

RSCA ranges from minus one to plus one ( $-1 < RSCA < 1$ ) and avoids the problem of zero values. Positive indices show a comparative advantage while negative indices reflect a comparative disadvantage.

## III. ANALYSIS AND INTERPRETION

Table 1 (see appendix) shows India's export to Nigeria with top five product which India export most to Nigeria. Those five are Pharmaceutical products (30), Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof (84), Cereals (10), Vehicles other than railway or tramway rolling stock, and parts and accessories thereof (87), Articles of iron or steel (73). All these products are contributing near about 50% of the total export of India's to Nigeria. So, it is very important to understand that which of these commodities are giving the High RCA to India in respect to the total export of India. For understanding the competitiveness Revealed Comparative Advantage (RCA) has been calculated.

Table 2 (see appendix) shows RCA and RSCA value of India's trade with Nigeria from 2000-01 to 2016-17 by using the Balassa's and Dalum et al (1998) comparative advantage index. Export of commodities Pharmaceutical products (30), Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof (84), Vehicles other than railway or tramway rolling stock, and parts and accessories thereof (87), Articles of iron or steel (73). has positive values that means it has comparative advantage for India. The product Cereals (10), has negatives values that means the export of these commodities is disadvantageous for India. Based on the results India is having a Revealed Comparative Advantage by exporting four commodities these are Pharmaceutical products (30), Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof (84), Vehicles other than railway or tramway rolling stock, and parts and accessories thereof (87), Articles of iron or steel (73), and mainly with Pharmaceutical products because of the average value of RCA from the period 2000-01 to 2017-18 is 50 and having a higher positive value of RSCA near to 0.9 so we can say that between the Bilateral Trade of India and Nigeria, India is having a huge Comparative advantage over Nigeria in this trade. These commodities plays comparative advantage because of the following government interventions

## ACTIVE INDIAN CORPORATIONS (Mainly in Pharmaceuticals) IN NIGERIA

Currently, around 135 Indian corporations operating in Nigeria, all of which are owned or operated by Indians. Prominent among them are Tata, Bajaj Auto, Bharti Airtel, Mahindra, Ashok Leyland, Aptech, Birla Group, NIIT, New Indian Assurance, Bhushan Steel, KEC, Skipper Nigeria, Dabur, Ranbaxy and Primus Super-specialty Hospital apart from 14 noticeable corporations in Power Sector of Nigeria. Indian companies have conquered the pharmaceuticals, manufacturing and retailing of consumer goods, constructions and air-services, as well as power and transmission sectors in Nigeria.



The Indian owned or operated corporations are said to be the second biggest employer of labour in Nigeria next to the Federal Government.

#### INDIAN CORPORATIONS SUBSIDIARY TO NIGERIAN CORPORATIONS

Interestingly, a reasonable number of Indian corporations are undertaking turn-key projects for the Nigerian corporations. As such, more market for Indian engineering goods and services in Nigeria.

Currently, Dangote Group of Nigeria is establishing the biggest Petro-chemical and fertilizer facilities, and many Indian corporations are linked to the task management, supply and construction of other fixtures for the facilities. Examples of the corporations are Bharat Bijlee, Engineers India Limited (EIL), PhilsEngg, Larsen & Toubro, Techno, Vijay Tanks, and so on.

#### IV. CONCLUSION AND RECOMMENDATIONS

This study shows the structure of India-Nigeria transaction along-side trade complimentary. The discussion indicate that from trade between India and Nigeria, taking Indian exports, India exports mainly these five products are Pharmaceutical products (30), Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof (84), Cereals (10), Vehicles other than railway or tramway rolling stock, and parts and accessories thereof (87), Articles of iron or steel (73) the contribution of these sector is an average of 50% of Indian total exports to Nigeria so it is very important to study these sectors. The study is been done on time series based data from 2000-01 to 2016-17.

Indian companies those are export most to Nigeria is mention in the paper. The important thing to understand is the value of RCA and RSCA so that we can know that how much India is getting the benefits from this trade. The value of RCA and RSCA is been calculated and results were as follow.

RCA and RSCA value of India's trade with Nigeria from 2000-01 to 2016-17 by using above mention formulas in excel. Export of commodities Pharmaceutical products (30), Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof (84), Vehicles other than railway or tramway rolling stock, and parts and accessories thereof (87), Articles of iron or steel (73). has positive values that means it has comparative advantage for India. The product Cereals (10), has negatives values that means the export of these commodities is disadvantageous for India. From the above mention products, the product code 30 (Pharmaceutical Product) is giving the highest advantage to India is this trade as the value of RCA is 50 on average and the value of RSCA is also near to 1 which tell us that this product trade is giving very high advantage to India.

Therefore, the study recommends a forward to mutual trade between India and Nigeria through a reasonable value of RCA and RSCA through by using incentive device to boost export to India. The Nigerian government need to invest more on education, science and technology, InfoTech, as well as empirical study so as to diversify the country's economy for a sustainable economic development, and India should try or can try to export more to Nigeria as they are having high RCA and RSCA.

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# India's Trade with Nigeria: A Competitive Analysis through RCA and RSCA Index



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## APPENDIX

**TABLE 1: INDIA'S EXPORTS TO NIGERIA FROM 200-01 TO 2017-18**

In 000 US

Year	TOTAL All products	Pharmaceutical products (30)	Machinery, mechanical appliances, nuclear reactors, boilers;parts thereof (84)	Cereals (10)	Vehicles other than railway or tramway rolling stock, and parts and accessories thereof (87)	Articles of iron or steel (73)	Contribution by these sectors to total Export (%)
2000-2001	515,304	71,655	70,213	44,607	52,799	40,309	54
2001-2002	478,113	72,641	68,289	32,445	32,141	28,500	49
2002-2003	561,203	71,722	72,729	36,507	48,279	35,855	47
2003-2004	539,783	91,058	73,797	76,583	29,050	36,811	57
2004-2005	852,099	106,686	99,386	156,531	32,459	96,371	58
2005-2006	932,942	121,865	136,005	157,372	36,368	55,109	54
2006-2007	992,814	132,474	142,042	66,231	49,395	123,300	52
2007-2008	1,369,418	182,190	251,966	20,874	133,349	56,651	47
2008-2009	1,543,343	167,619	152,229	222	165,201	42,799	34
2009-2010	1,917,926	177,563	153,795	408	230,366	51,584	32
2010-2011	2,557,091	257,846	238,853	216,728	319,870	125,231	45
2011-2012	2,828,459	276,161	263,654	502,144	360,767	88,918	53
2012-2013	2,897,204	374,855	337,870	45,740	499,243	80,082	46
2013-2014	2,872,163	384,388	360,633	154,388	546,061	91,175	54
2014-2015	2,286,611	389,711	287,823	46,632	427,409	70,338	53
2015-2016	1,742,861	354,804	194,811	12,640	224,058	52,759	48
2016-2017	2,066,265	377,160	251,913	6,498	247,426	75,911	46
2017-2018	2,740,690	417,279	405,685	3,303	450,388	118,090	51

Sources: ITC calculations based on Directorate General of Commercial Intelligence & Statistics and UN COMTRADE

Table 2: Commodity wise RCA and RSCA of India with Nigeria

Year	RCA					RSCA				
	Pharma* (30)	Machinery + (84)	Cereals (10)	Vehicles # (87)	Iron and Steel (73)	Pharma* (30)	Machinery* (84)	Cereals (10)	Vehicles* (87)	Iron and Steel (73)
2000-2001	77.80	37.77	3.05	37.06	27.36	0.97	0.95	0.51	0.95	0.93
2001-2002	56.23	30.22	1.27	27.85	6.78	0.97	0.94	0.12	0.93	0.74
2002-2003	66.47	14.20	1.63	24.68	5.78	0.97	0.87	0.24	0.92	0.70
2003-2004	29.61	12.75	2.64	9.40	4.11	0.93	0.85	0.45	0.81	0.61
2004-2005	26.21	13.22	3.80	6.71	7.51	0.93	0.86	0.58	0.74	0.77
2005-2006	49.13	10.75	2.77	3.92	3.61	0.96	0.83	0.47	0.59	0.57
2006-2007	51.50	9.02	0.65	3.61	3.99	0.96	0.8	-0.21	0.57	0.60
2007-2008	80.47	12.18	0.72	6.72	1.92	0.98	0.85	-0.16	0.74	0.32
2008-2009	49.32	5.55	0*	3.74	1.43	0.96	0.69	-0.99	0.58	0.18
2009-2010	31.73	4.66	0.01	2.95	0.85	0.94	0.65	-0.98	0.49	-0.08
2010-2011	35.73	6.32	0.92	5.75	3.26	0.95	0.73	-0.04	0.70	0.53
2011-2012	43.80	10	2.02	5.76	2.82	0.96	0.82	0.34	0.70	0.48
2012-2013	50.46	10.27	0.35	13.55	2.33	0.96	0.82	-0.48	0.86	0.40
2013-2014	42.46	8.21	0.78	12.19	2.2	0.95	0.78	-0.13	0.85	0.38
2014-2015	35.97	7.92	0.41	15.63	2.52	0.95	0.78	-0.42	0.88	0.43
2015-2016	27.32	4.38	0.17	12.36	2.9	0.93	0.63	-0.7	0.85	0.49
2016-2017	43.09	8	0.06	14.96	4.75	0.95	0.78	-0.88	0.87	0.65

Source: UNCOMTRADE, Calculated by Authors

Note: \* Pharmaceutical products

+ Vehicles other than railway or tramway rolling stock, and parts and accessories thereof

# Machinery, mechanical appliances, nuclear reactors, boilers; parts thereof