

# India's Trade Relation with BRICS Countries and Issues of Sustainability

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## Abstract

This study is an attempt to analyze the significance of India's trade relations with other BRICS nations in terms of sustainability. To examine the sustainability of India in BRICS nations, a time duration ranging between 1995 to 2018 has been taken. The time horizon has been divided into two parts as pre- and post-formation of the BRICS group, which makes it easier to determine the sustainability of India in this organization. The question of sustainability arises because of the heterogeneity in the character of all the member countries of BRICS. Statistical tools like trade intensity index and correlation have been used to understand the degree of intensity of trade and inter-dependency of member countries in terms of trade. The findings of the study suggest that there is great mutual dependency among the BRICS nations except for China. On the basis of an analysis of trends in trade and trade intensity, it can be concluded that the effectiveness of BRICS is limited and several questions can be raised on the significance of BRICS as a group.

**Keywords:** BRICS; Trade; Trade Intensity Index; Revealed Comparative Advantages Index.

## 1. INTRODUCTION

In the later eighteenth century or the early nineteenth century, trade was not too much considered for economic growth but in the modern era especially after the 1950s, it was considered as an engine of growth. To accelerate international trade especially in developing economies, many regional, bilateral, multilateral, and intra-regional trade agreements took place among the grouping nations. Groups such as BRICS, ASEAN, and BIMSTEC emerged in the last two decades (Rahman and Grewal, 2017; Rahman and Nayyer, 2018; Iqbal and Rahman, 2015). The BRIC is also a part of a multilateral trade agreement that was set up in 2009 by an initiative of Russia currently it is known as BRICS after the joining of the Republic of South Africa in 2010. BRICS economies, an acronym for the economies of Brazil, Russia, India, China, and South Africa creates a strong counterweight and alternative to the existing world powers like the US, EU, and Japan in both economic and political areas. The member countries of BRICS are the emerging economy of the world (Iqbal and Rahman, 2016). BRICS play a significant role in the world economy. 40% of the total population of one-third of the landmass is residing in these countries and these contribute nearly 25% of the global GDP. Instead of impressive economic performance, these countries are still facing a wide range of challenges, such as high unemployment rates, limited access to education, or issues in the health care system, all of which represent significant obstacles on the path to rapid economic growth. In addition, the BRICS countries differ distinctly with regard to social development, economic performance, historical background, and current political aims (Iqbal and Rahman, 2016).

## 2. STATE OF BRICS ECONOMIES

Currently, BRICS has severe economic and political woes due to globally falling commodity prices as all of the member countries of BRICS heavy reliance on export-led growth model except India. The share of export in GDP in India was 23.2%, 30.0% of Russia and it was 31.3% for South Africa in 2014. Which clearly shows India's limited reliance on export for economic growth. In terms of quality of life, India holds the fourth position among BRICS economies while in terms of social development it's a mixed performance. In the Social Progress Index (SPI), Brazil (70.89) followed by South Africa (65.64), Russia (63.64), China (59.07), and India (53.06). In recent studies, the disparity with respect to Social Indicators has been highlighted by researchers (In terms of Basic Human Needs), Russia stands at the first position. Brazil leads the group on Foundations of Wellbeing and Opportunity. India belongs to the group of low social progress countries on these two indicators (Iqbal *et al.*, 2019a). Basic Human Needs and Foundation of Wellbeing and Opportunity, India only stay ahead of China in the Opportunity dimension. Further assessment of the SPI on the personal safety dimensions has been an area of concern in South Africa and Brazil. The homicide is 5 on a scale of 1-5 for both countries. In contrast, China has the lowest homicide rate

of 1. In addition to this, India has about 15% of its population which is undernourished, as compared to Brazil, Russia, and South Africa which have only 5%, undernourished people. Maternal mortality rate and child mortality rates are also very high in India relative to the others in the group. South Africa has the lowest life expectancy for its population (56.1) and China has the highest (75.2) (Iqbal *et al.*, 2019a). Another major aspect of a nation's well being is its environmental sustainability, on this scale; China, Russia, and South Africa have a high content of greenhouse gas emissions relative to Brazil and India.

According to a report of the world economic forum on the dimension of Education, Russia has the highest adult literacy rate of 99.7%, while India lags at 71.2%, and India is also suffering from the highest inequality in education among BRICS economies. In the case of Tolerance and Inclusion, India has a comparatively weak performance to other BRICS countries which is crucial to national prosperity. Tolerance and inclusion are a dimension of the Social Progress Index (SPI) developed by the Social Progress Imperative, Washington.

From the above analysis, it is very clear that all the BRICS countries except India are sharing a common economic downturn in recent times while their social environments are diverse in several aspects. It exhibits that only economic progress may not be the only sufficient factor to translate into a higher quality of life of the countries. Thus, the need arises to focus on measures in the social spheres in which they are lagging.

### 3. LITERATURE REVIEW

For analyzing the competitiveness and complementarity of China's trade with other BRICS nations the focus was mainly on agricultural products and services products. To examine the state of the world economy, the relationship between G7 and some other larger economy of the world including the BRICS nations has been discussed, for forecasting the state of BRICS nation by using their GDP growth, per-capita income, and currency movement and also to exhibit the state of the economy. Cooper and Farooq (2016) have identified four pillars namely, educated and skilled population; a network of R & D institutions; a dynamic information infrastructure; and finally, a regime promoting the development of knowledge and further analyzed the state of BRICS economy and its impact on the world. A further attempt has been made to find out the barrier in trade especially among the BRICS nations by focusing on the transport barrier in general and especially among IBSA (India, Brazil, and South Africa) (Gratius and Sousa, 2010). To examine the significance of bilateral trade and relations studies have been focused on and summarized the bilateral trade between India and China and between Brazil and India Hirst (2008) found the relationship to be blooming, favored by a mix of domestic and international developments. The economic implications cast a significant impact on the rise of BRICS nations and their rapid growth in industrialized countries and developing countries. China and India have emerged as highly dynamic economies in recent years because both countries have steady progress on technology front like ICT and because of the easy accessibility to these services among LDCs and other developing countries (Mohanty and Chaturvedi, 2006). Positive signs for exports as well as imports for BRICS and negative for non-BRICS regions have been observed in FTA, however, a higher positive change in imports than exports would result in a negative trade balance for all member countries except Russia (De Castro, 2013). The pattern of structural changes in infrastructure for the economic growth of the BRICS countries shows that only China has a significant part of aggregate growth. China has also emerged as one of the most prominent members and has the potential to lead BRICS (Iqbal *et al.*, 2020). China's geopolitical projects of One Belt One Road and Belt and Road Initiative has the potential to transform both Asian and Eurasian region (Rahman and Rahman, 2019; Iqbal *et al.*, 2019b). Brazil's trade openness contributes to a reduction in regional inequalities but increases regional inequality in India while in the case of inflows FDI has been observed an increase in regional disparities for both countries (Daumal, 2013). BRICS nations as members of the World Trade Organization have substantially improved their contribution to world trade (Rahman, 2016).

From the review of literature, a research gap has been identified in the domain of empirical studies of India's trade relation with BRICS countries and sustainability issues. To analyze the issue of sustainability a study on competitiveness and complementarity of trade among the BRICS nations was direly required. To find out the sustainability of India's trade with other BRICS nations, the following objectives have been formulated.

### 4. SCOPE AND METHODOLOGY

#### 4.1 Objectives of the Study

- (1) To analyze the trends and pattern of India's trade with BRICS nations
- (2) To examine the trade intensity of India's trade with BRICS nations.
- (3) To identify the commodities with trade potential.

#### 4.2 Methodology Used

The study is based on secondary data analysis and data were collected through the wide variety of sources viz. Direction of trade of IMF, WITS of World Bank, UN Comtrade of United Nations, World economic Survey and Indian Economy Survey etc. The analysis is done by adopting the following indices:

##### (1) Trade Intensity Index

Trade Intensity Index (TII) is popularly used to determine the total value of trade that exists between any two countries. It can be defined as the share of one country's exports going to the partner country which is divided by the share of world exports going to the same partner. This can be expressed as:

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

Where,  $x_{ij}$  = the values of country  $i$ 's exports to country  $j$

$x_{wj}$  = country  $i$ 's total exports

$X_{it}$  = the values of world exports to country  $j$

$X_{wt}$  = total world exports

The TII value ranges between 0 and 1. A value of '0' indicates a lower degree of Trade Intensity Index (TII) between the countries and '1' a higher Trade Intensity Index TII value.

**(2) Correlation Matrices**

We use the correlation statistical tools to find out the mutual dependency of trade among BRICS nations. Studies suggest that a preliminary correlation analysis may lead to good inferences (Rahman, 2018).

**5. TREND IN INDIA'S TRADE WITH OTHER BRICS COUNTRIES**

Table 1 reveals the trends of India's trade with other countries of BRICS and the percentage share of India's export and import to these nations during the pre- and post-era of the establishment of BRICS. The table shows that India is bearing a deficit balance of trade with the world during the analyzed period. The trends of trade between India and Brazil reveal the fluctuated trends because of the negative trade balance of India with Brazil during 1995, 2015, and 2018 and India has positive trends for the remaining years 2000, 2005, and 2010. Table 1 shows trends and performance of India's trade with other countries of the BRICS nations:

**Table 1: India's trade trends with BRICS nations.**

Year	World		Brazil		Russia		China		South Africa	
	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
1995	31698.57	36592.06	85.89	260.47	1041.83	822.82	331.69	810.14	337.80	244.61
	100%	100.00%	0%	0.71%	3%	2.25%	1%	2.21%	1%	0.67%
2000	42358.10	52940.25	192.29	180.13	855.66	543.38	734.89	1477.6	307.80	1394.91
	100%	100%	0%	0.34%	2%	1.03%	2%	2.79%	1%	2.63%
2005	100352.64	140861.67	969.81	883.16	705.69	2036.95	7183.79	10167.06	1404.10	2683.48
	100%	100.00%	0.97%	0.63%	0.70%	1.45%	7.16%	7.22%	1.40%	1.91%
2010	220408.50	350029.39	3669.56	3220.99	1393.22	3591.55	17439.99	41249.12	3650.06	6912.19
	100%	100%	2%	1%	1%	1%	8%	12%	2%	1.97%
2015	264381.00	390744.73	3099.15	4107.80	1611.89	4527.09	9576.58	61604.43	3814.36	6275.84
	100%	100%	1%	1%	1%	1%	4%	16%	1%	2%
2018	322291.57	617945.60	3576.96	5616.20	2332.62	8502.81	16365.81	90398.34	4016.93	8242.79
	100%	100%	1%	1%	1%	1%	5%	15%	1%	1.33%

Source: Author's own work as per the data collected from WITS.

The analysis of India's trade with Russia reveals that the value of exports is higher than imports for 1995 and 2000 while the import is greater than export during 2005, 2010, 2015, and 2018. India's trade with China shows import is greater than export except for the year of 2018. In the case of Indo-South Africa, the results are not favorable for India because of a deficit in trade except for the year 1995.

Table 2 analyzes the degree of intensity or trade concentration between India and other countries of BRICS. We have also analyzed the trade intensity of different members of the BRICS that helps to find out the reasons. The value of export intensity trade during the different years of analysis is almost equal to or greater than one except the two recent years. It means the export of India to BRICS is favorable. The reasons may be the high degree of concentration of India's export to South Africa. The trade intensity model is found to be irrelevant in the case of India's export to SA because India mainly exports primary products to SA. On the other hand, in the case of India's import from other BRICS nations, it has a good and high degree of intensity. The value of import trade intensity from the BRICS nation is almost more than one because of the high degree of intensity import from SA.

**Table 2: Trade Intensity Index of India's trade relations with BRICS.**

Year	Export Intensity Trade					Import Intensity Trade				
	Brazil	Russia	China	SA	BRICS	Brazil	Russia	China	SA	BRICS
1995	0.27	3.63	0.35	2.16	1.06	0.73	0.02	0.71	1.12	1.04
2000	0.51	2.98	0.53	1.82	0.95	0.40	0.05	0.72	6.45	1.01
2005	1.36	0.56	1.31	2.78	1.29	0.55	0.04	0.99	4.25	1.00
2010	1.36	0.43	1.00	2.97	1.06	0.69	0.09	1.13	3.62	1.05
2015	1.20	0.55	0.44	2.85	0.63	0.99	0.08	0.84	3.98	0.91
2018	1.16	0.60	0.56	2.67	0.70	0.72	0.08	1.11	2.69	1.05

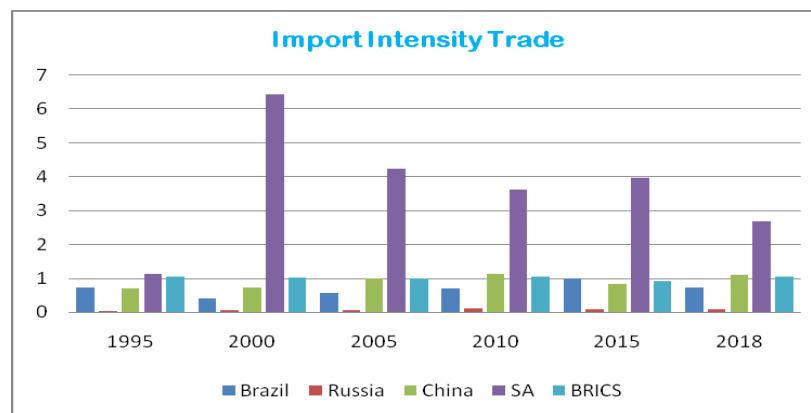
Source: Author's own work as per the data collected from WITS.

**Figure 1: The export intensity of India with BRICS nations.**



Source: Author's own estimation from Table 2.

**Figure 2: Import intensity of India with BRICS nations.**



Source: Author's own estimation from Table 2.

In brief, the analysis shows the import intensity index is higher than export intensity and India's trade with SA is highly concentrated.

From the above analysis, it can be concluded that India's trade relations with BRICS nations are not favorable in the long-term scenario. The need to take some initiative to improve the export of industrial goods on a priority basis is specifically observed in the study.

## 6. MUTUAL DEPENDENCY OF BRICS NATIONS

Table 3 shows the mutual dependency of trade among BRICS nations. To calculate mutual dependency, we have taken the current year (2018) export data of different countries of BRICS. The analysis has revealed that India's trade with Brazil and Russia has perfectly mutual and vice-versa while with SA the trade relations are moderate and with China is not good.

**Table 3: Correlation matrices.**

Exports/Imports	Brazil	Russia	India	China	SA
Brazil	1.000	0.999	1.000	0.353	0.981
Russia	0.999	1.000	1.000	0.296	0.988
India	1.000	1.000	1.000	0.260	0.994
China	0.353	0.269	0.260	1.000	-0.903
SA	0.981	0.988	0.994	-0.903	1.000

Source: Author's own work as per the data collected from WITS.

## 7. FINDINGS

- (1) The analysis of India's trends of trade with other countries of BRICS nations has no such significance to justify the importance and benefits of BRICS for these countries especially for India because of the growth rate of India's export to and imports from the BRICS countries before and after set up of BRICS are almost same and also the growth rate of India's export or India's import from these countries are around 1% during 1995 to 2018.
  - a. The growth rate of India's export to and import from China were 8% and 12% respectively which represents a gloomy picture for the Indian economy due to the mounting trade deficit for India.
  - b. The analysis of the trade intensity index shows that the value of the index is almost equal to one for each period that shows the expectation of India's trade with these countries has been fulfilled, but the intensity is the same for both pre- and post-period of BRICS formation which again raises the question of relevance for BRICS and question of sustainability of India with BRICS.
- (2) Correlation matrices reveal that all countries of BRICS nations are mutually dependent on each other except China. The correlation matrices of China with other countries shows that China is not dependent on the BRICS nations.

## 8. CONCLUSION

From the above analysis and findings, it would not be superlative to say that BRICS is a band of perfect misfits. A clear degree of heterogeneity between demographic, economic, and political scenarios among the member countries can be observed. Though the group comprises of the world's fastest-growing economies and plenty of mutual dependencies can be observed. While India is progressively increasing its influence in Africa as evident from the trade relations between India and South Africa, but still China plays a dominant role among the member nations, while declaring a strong commitment to sustainable development, China's dominance is indeed challenging the core idea of sustainability among BRICS nations.

### Author Contributions

Both authors contributed equally to this study.

### Conflict of Interest

None.

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