

India–BRICS Trade Dynamics: An intensity-based Empirical assessment (2001–2020)

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Abstract

This study examines India's trade performance with BRICS countries—Brazil, Russia, China, and South Africa—over the period 2001 to 2020, focusing on whether India's trade engagement with these partners met its potential as measured by standard trade intensity indices. By applying the Export Intensity Index (XII), Import Intensity Index (MII), and Trade Intensity Index (TII), the paper evaluates whether India's trade flows with BRICS countries exceeded or fell short of global trade expectations. The findings reveal that India's trade intensity with each of the BRICS partners remained below the benchmark value of 1 throughout the period, suggesting unrealized trade potential despite growing diplomatic and institutional ties. Notably, South Africa emerged as India's most consistent and improving trade partner, while trade intensity with China and Russia declined. This study provides a comprehensive, data-driven insight into India's role within the BRICS trade framework and suggests policy measures to strengthen regional economic integration.

Key words : Trade Intensity, Export Intensity, Import Intensity, India-BRICS Trade, Regional Integration, South-South Trade.

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Trade integration among BRICS countries has gained strategic importance in the wake of shifting global economic dynamics. With the emergence of multipolarity in international trade and finance, BRICS nations have increasingly sought to reduce dependence on traditional Western markets and institutions. Among them, India, as a rapidly growing economy, plays a pivotal role in enhancing intra-BRICS economic cooperation. Trade among BRICS members is seen as a potential force for balanced global growth, given their large populations, resource bases, and expanding middle classes.

India's bilateral trade with Brazil, Russia, China, and South Africa reflects its broader aim to strengthen south-south cooperation and diversify trade partnerships. However, despite numerous summits, declarations, and institutional mechanisms established within BRICS to enhance economic integration, actual trade intensity among the members has often lagged behind expectations.

This paper focuses on evaluating India's trade patterns with its BRICS counterparts before and after the formal formation of the bloc in 2009. Specifically, it analyzes whether trade with these countries intensified following BRICS' establishment or remained suboptimal due to structural constraints, geopolitical frictions, and trade composition mismatches. By employing the Trade Intensity Index framework, the study aims to provide a comprehensive understanding of the evolution of India-BRICS trade relationships over two decades.

Objectives of the study :

To analyse the trends in the inter-

BRICS trade intensity between India and other BRICS countries from 2001 to 2020.

Statement of the problem :

Despite various diplomatic and economic initiatives, India's trade with BRICS countries has often been criticized for not reaching its potential. The lack of sufficient trade volume and diversification raises questions about the effectiveness of BRICS as a trade bloc and India's role within it. This study seeks to empirically explore these concerns using intensity indices.

Scope and significance of the study :

This study covers a 20-year period, divided into pre- and post-BRICS formation phases (2001–2005 and 2006–2020 respectively). The focus is on evaluating India's trade flows in terms of exports and imports with the rest of the BRICS countries using standardized trade intensity metrics. The results are expected to inform policy decisions and provide insights for academics and stakeholders about regional trade integration.

Review of literature and Research gap:

Several studies, such as those by Castro¹ and others, have assessed the evolving trade relationships within BRICS. These studies highlight an increasing trend in trade shares but fall short of examining trade intensity in depth. The current literature lacks a robust longitudinal analysis using trade intensity metrics specifically from India's perspective. This study fills that gap by offering a time-series analysis of India's export and import intensity with BRICS nations.

According to Sharma and Kundu² although BRICS nations exhibit growing interdependence in macroeconomic performance, trade flows remain concentrated with non-BRICS economies, especially in Asia and the West.

Similarly, Balassa³ emphasized the importance of trade intensity analysis to understand trade complementarity and the potential for regional integration, which has not been extensively applied in the context of BRICS.

Moreover, the work of Hannan⁶ suggests that trade integration is often shaped not only by economic fundamentals but also by institutional quality, infrastructure, and diplomatic alignment—factors that are inconsistently developed across BRICS. Research by Bhattacharyya and Mandal⁴ on India-China trade patterns observed a heavy trade imbalance and stressed the lack of diversification in India's exports. However,

their study limited its scope to bilateral flows, overlooking the broader BRICS framework.

Jain and Batra⁵ analyzed trade competitiveness within BRICS and suggested that intra-bloc trade suffers due to tariff barriers, political tensions, and underdeveloped logistics.

Thus, the literature calls for a focused, multi-country, temporal examination of India's trade intensity with BRICS using a robust analytical framework. This study fills that gap by systematically assessing the long-term trends in both export and import intensity between India and its BRICS partners, highlighting opportunities and challenges for deeper economic integration.

Sources of Data :

The study utilizes secondary sources for data collection. It aims to investigate trade intensity between India and other BRICS nations.

Data Sources :

Variables	Period	Source of Data	Tools
Export of India to BRICS Countries.	2001 - 2020	International Financial Statistics Yearbook (IMF)	Trade Intensity Index
Import of India from BRICS Countries.			

Tools of analysis :

India's trade relations with BRICS nations are measured through a trade intensity index. The measures are used to determine whether the value of trade between two

countries is greater or smaller than expected value on the basis of their importance in world trade. Trade intensity of Inter-BRICS trade has been measured separately between India and other BRICS exports, imports and total trade.

Export Intensity Index (XII) :

Export Intensity Index (XII) is defined as the ratio of a trading partner's share to a country's total export and the share of world exports going to the same trading partner. It is calculated as:

$$XII_{ij} = (X_{ij}/X_{iw})/(x_{wj}/X_{ww})$$

Where, x_{ij} is the dollar value of exports of country i to country j ,
 X_{iw} is the dollar value of the exports of country i to the world,
 x_{wj} is the dollar value of world exports to country/region j , and
 X_{ww} is the dollar value of world exports.

Import Intensity Index (MII) :

Import Intensity Index (MII) is defined as the ratio of a trading partner's share to a

country's total import and the share of world imports from the same trading partner. It is calculated as:

$$MII_{ij} = (m_{ij}/M_{iw})/(m_{wj}/M_{ww})$$

Where, m_{ij} is the dollar value of imports of country i from country j ,
 M_{iw} is the dollar value of the imports of country i from the world,
 m_{wj} is the dollar value of world imports from country/region j , and
 M_{ww} is the dollar value of world imports.

Export Intensity (2001–2020):

India's export intensity with all BRICS nations remained below 1 throughout the study period. However, there was an increase in export intensity with South Africa post-2006, indicating improved trade linkages. Export intensity with China showed a declining trend after 2005, stabilizing slightly post-2012.

Table-1. India's Export Intensity Indices with Other BRICS Economies

Year	Brazil	China	Russia	South Africa
2001	0.066	0.068	0.230	0.188
2002	0.164	0.062	0.446	0.169
2003	0.133	0.058	0.595	0.137
2004	0.114	0.044	0.386	0.140
2005	0.147	0.043	0.238	0.218
2006	0.094	0.036	0.205	0.111
2007	0.070	0.043	0.187	0.157
2008	0.052	0.051	0.169	0.223
2009	0.165	0.046	0.190	0.220
2010	0.121	0.046	0.158	0.244
2011	0.079	0.040	0.071	0.193
2012	0.147	0.034	0.148	0.223
2013	0.068	0.030	0.121	0.160

(1929)

2014	0.115	0.036	0.128	0.219
2015	0.128	0.056	0.191	0.228
2016	0.120	0.056	0.174	0.254
2017	0.179	0.066	0.165	0.290
2018	0.125	0.049	0.189	0.276
2019	0.087	0.042	0.168	0.263
2020	0.116	0.040	0.160	0.286

Source: Computed



Source: Extracted from table

Figure 1. India's Export Intensity Indices with Other BRICS Economies

This graph illustrates India's export intensity with each BRICS country over two decades. The steepest rise is visible with South Africa, particularly post-2010, indicating growing export integration. The curve for Brazil fluctuates but maintains a mild upward slope. China's trend line shows a noticeable decline post-2005, while Russia's intensity remains low and relatively unchanged. This pattern suggests India has not significantly

capitalized on its export potential within BRICS except with South Africa.

Import Intensity (2001–2020): Import intensity values were also consistently below 1. South Africa again showed an increasing trend, especially after 2010. Import intensity with China and Russia showed a sharp decline, while Brazil demonstrated slight fluctuation post-2006.

(1930)

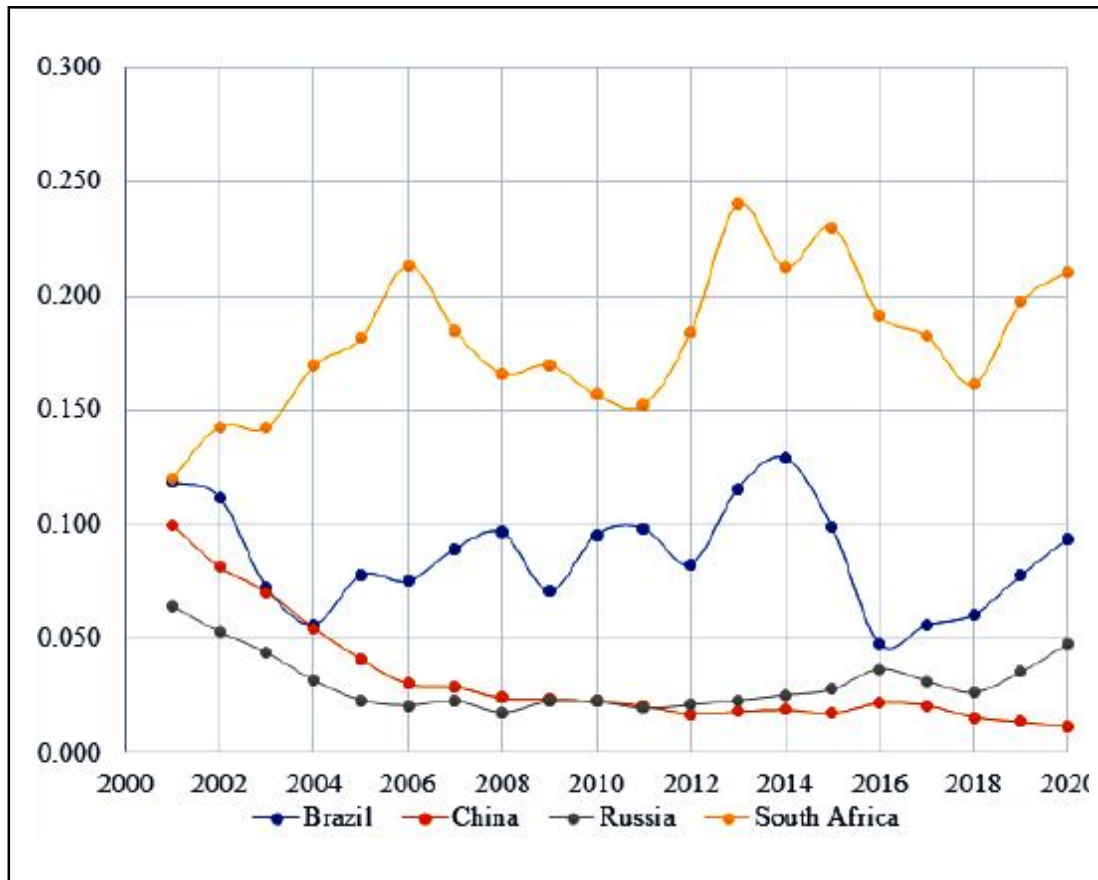
Table-2. India's Import Intensity Indices with Other BRICS Economies

Year	Brazil	China	Russia	South Africa
2001	0.119	0.100	0.064	0.120
2002	0.112	0.081	0.053	0.143
2003	0.072	0.071	0.044	0.142
2004	0.056	0.055	0.032	0.169
2005	0.078	0.041	0.023	0.181
2006	0.075	0.030	0.021	0.214
2007	0.089	0.029	0.023	0.185
2008	0.096	0.024	0.018	0.166
2009	0.071	0.024	0.023	0.170
2010	0.095	0.023	0.023	0.157
2011	0.098	0.021	0.020	0.152
2012	0.083	0.017	0.021	0.184
2013	0.116	0.018	0.023	0.240
2014	0.129	0.019	0.025	0.212
2015	0.099	0.017	0.028	0.230
2016	0.048	0.022	0.037	0.192
2017	0.056	0.021	0.032	0.183
2018	0.061	0.016	0.027	0.162
2019	0.078	0.014	0.035	0.197
2020	0.094	0.012	0.048	0.211

Source: Computed

The import intensity trends clearly depict South Africa as the standout partner, with a consistent rise in the index value post-2010. Conversely, China and Russia show sharply declining import intensities, indicating a retreat in India's relative import reliance on

these countries. Brazil's curve oscillates with minor gains, revealing an erratic import relationship. These variations reinforce the view that India's trade intensity has been unequally distributed among its BRICS partners.



Source: Extracted from table 2

Figure 2. India's Import Intensity Indices with Other BRICS Economies

India's trade intensity with BRICS nations has remained below potential over the last two decades, despite the diplomatic importance of the bloc. While trade relations with South Africa have strengthened, especially in the post-2006 period, the declining intensity with China and Russia suggests the need for renewed policy focus. Future efforts should aim at deepening economic ties through trade agreements, infrastructural support, and diversified exports.

Limitations of the study

- 1) The study relies solely on secondary data.
- 2) Only intensity indices are used, without incorporating qualitative trade factors such as tariffs or non-tariff barriers.
- 3) The analysis does not account for external shocks (e.g., financial crises or pandemics).

Scope for further Research

This study provides a foundational analysis of India's trade intensity with BRICS

countries using quantitative indices over a two-decade period. However, several areas remain open for further exploration. Future research could incorporate qualitative dimensions such as tariff and non-tariff barriers, trade policy shifts, and institutional efficiency to better explain trade outcomes. Comparative studies between BRICS and India's other trade blocs (e.g., ASEAN, SAARC) could help contextualize performance. Moreover, sector-specific trade intensity analysis—especially in pharmaceuticals, energy, and technology—could offer insights into untapped trade potential. The impact of recent geopolitical developments, supply chain realignments, and digital trade growth also present relevant directions for longitudinal and policy-driven studies.

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Conflict of Interest

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