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Revisiting the Impact of SAFTA on India's Agri Trade: A Comprehensive Analysis

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ABSTRACT

The South Asian Free Trade Agreement (SAFTA), formed in July 2006, aims to eliminate tariff and non-tariff barriers and promote trade among South Asian nations. Nearly 20 years after its inception, SAFTA, like many other FTAs, has experienced various fluctuations in trade among its member countries. This study aims to evaluate the impact of SAFTA on India's agricultural trade through empirical analysis, encompassing Compound Annual Growth Rate (CAGR), instability, trade intensity, Revealed Comparative Advantage (RCA), and gravity model analysis. The findings indicate moderate success of SAFTA in boosting India's agricultural trade. India's agricultural exports have grown with countries like Bangladesh, Sri Lanka, and Nepal, while a decline has been observed with countries such as Pakistan and the Maldives for different reasons. Trade intensity analysis reveals that India's exports are more focused on SAFTA nations than its imports from them. The top agricultural export commodities of India to SAFTA countries were identified, and comparisons were made with the top global exporters. Using the PPML method in gravity model analysis, it is observed that India's agricultural exports have significantly increased since the establishment of SAFTA. The benefits of regional integration could be further strengthened by promoting political stability, reducing non-tariff barriers, and enabling greater participation by least-developed countries

Keywords: SAFTA, agricultural trade, RCA, gravity model, regional integration

JEL Codes: C23, F13, F14, O53, Q17

I

INTRODUCTION

Regional trade agreements (RTAs) have become a defining feature of the global trading system, aimed at reducing tariff and non-tariff barriers to stimulate cross-border trade and regional integration. South Asia, with 24 per cent of the world's population but less than 6 per cent share in global trade, has long been characterised by low intra-regional trade due to political frictions, infrastructural gaps, and overlapping trade dependencies outside the region. To address these challenges, the South Asian Free Trade Agreement (SAFTA) was signed in 2004 and came into force in July 2006 under the framework of the South Asian Association for Regional Cooperation (SAARC). SAFTA was envisioned as a mechanism to enhance economic cooperation and gradually establish a South Asian common market by fostering greater trade among its eight members: Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka.

For India, agriculture plays a central role in livelihoods, food security, and trade (Dev, 2015). The SAFTA region offers a natural market for Indian agricultural exports, owing to shared dietary habits, cultural similarities, geographical proximity, and complementarities in production and consumption patterns. Countries such as

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Bangladesh, Nepal, and Sri Lanka have historically been significant importers of Indian agricultural commodities. At the same time, India depends on select SAFTA partners, such as Afghanistan, for critical imports like dry fruits and nuts. Despite these advantages, intra-SAARC agricultural trade remains far below potential, restricted by tariff escalation, non-tariff barriers, political conflicts, and infrastructural constraints (Kaul, 2018).

Existing studies on SAFTA present mixed findings. Some studies argue that India's trade linkages are pivotal to realising regional integration benefits (Rodriguez-Delgado, 2007; Wilson and Otsuki, 2007), while others highlight structural limitations such as low product complementarities, trade diversion, and political sensitivities (Baysan et al., 2006; Alam et al., 2011). Furthermore, while several analyses have assessed SAFTA's impact on overall trade, relatively few studies have systematically examined India's agricultural trade performance in the SAFTA era, primarily through the combined use of trade performance indicators (growth, instability, intensity, competitiveness) alongside advanced econometric approaches using the augmented gravity model.

Against this backdrop, the present study examines the impact of SAFTA on India's agricultural trade from 1996 to 2024. Specifically, it evaluates growth and instability trends, examines trade intensity with member nations, identifies India's comparative advantage in key agricultural commodities, and applies an augmented gravity model to analyse determinants of export flows. By doing so, the study helps to fill an important research gap in the effectiveness of SAFTA in promoting India's agricultural trade. It offers policymakers valuable insights on strengthening regional integration in South Asia.

II

DATABASE AND METHODOLOGY

This study utilised data from various authentic organisational sources for eight SAFTA countries from 1996 to 2024. The analysis considers the Harmonised System (HS) code at the 4-digit level. Exported and imported data, sourced from the UN-COMTRADE WITS database, have been used for multiple purposes in this study. To perform the gravity model analysis, data were collected from multiple sources, including CEPII, IMF-IFS, and the World Development Indicators of the World Bank. The study also analysed export-import trends, CAGR, instability, export-import intensity, revealed comparative advantage, and the gravity model using various analytical tools

2.1 Growth and instability of India's agricultural trade with SAFTA

The exponential growth function of the following form has been taken into consideration to estimate the Compound Annual Growth Rate (CAGR) of export and import (Gujarati, 2007)

$$Y = ab^t \varepsilon \ldots(1)$$

Where, Y= Export / Import value, a= constant term, b = Regression coefficient, t = time variable (1,2, 3…) and ε is the error term.

The log transformation of the equation is presented in the following form.

$$\text{Log}(Y) = \log(a) + t \log(b) + \varepsilon$$

Compound Annual growth rate = $(e^{b^*}-1) \times 100$, where $b^* = \log b$.

Though there are many econometric methods available to calculate instability, each method has its own advantages and limitations. The Cuddy-Della Valle method (Cuddy & Della Valle, 1976) has been applied here as it is most suited for trend data and measures instability more precisely.

Cuddy- Della Vella Index = CV $\sqrt{1 - R^2}$

Where,

CV=Coefficient of Variation

R^2 = Coefficient of Determination

For a better understanding of the comparison and effects of SAFTA, we have divided the entire period from 1996 to 2024 into three phases. The first phase, from 1996 to 2005, encompasses the creation of SAPTA up to the formation of SAFTA. The second phase, from 2006 to 2015, spans the formation of SAFTA until the completion of its trade liberalisation. The third phase, from 2015 to 2024, includes a period marked by numerous conflicts between nations, which have impacted the effectiveness of SAFTA. These three phases can be respectively named as the pre-SAFTA phase, the SAFTA implementation phase, and the SAFTA consolidation and challenge phase. A lower value indicates greater stability in India's agricultural exports and imports to its SAFTA partner nations

2.2 Agricultural Trade Intensity between India and SAFTA Nations

To analyse the degree of trade relations between India and SAFTA nations, an agricultural product export and import intensity index has been calculated for the period 1996-2024.

The algebraic formula for export and import intensity index is,

$$\text{Export Intensity Index} = \frac{\frac{X_{IS}}{X_I}}{\frac{M_S}{Mw - M_I}}$$

$$\text{Import Intensity Index} = \frac{\frac{M_{IS}}{M_I}}{\frac{X_S}{X_W - X_I}}$$

Where,

X_{IS}= Value of India's Agricultural Export to SAFTA Nations
X_I=Value of India's Total Agricultural Export
M_s =Total Agricultural Import by SAFTA Nations
Mw =Total world's Agricultural Import
M_I = India's total Agricultural Import
M_{IS} =Value of India's Agricultural Import from SAFTA Nations
X_s =Total Agricultural Export by SAFTA Nations
X_w =Total world's Agricultural Export

If the index value is more (less) between two nations, more (less) the trade flow between the nations.

2.3 Export competitiveness of India's top agricultural commodities in SAFTA

To understand the competitive dynamics of India's top agricultural export commodities over the years and to assess how competitive India is in exporting these commodities compared to other major trading nations to SAFTA, such as Brazil, the United States, and Pakistan, the Revealed Comparative Advantage (RCA) is calculated using the Bela-Balassa Index (1965). The RCA index is as follows:

$$\text{RCA}= \frac{\frac{X_{IB}}{X_B}}{\frac{X_{IA}}{X_A}}$$

Where,

X_{IB} = India's Agri export of commodity 'I' to other SAFTA nations.

X_B = India's total Agri export to other SAFTA nations.

X_{IA} = Total world export of commodity 'I' to SAFTA nations.

X_A = World total export of Agri commodities to SAFTA nations.

Interpretation of RCA is as follows:

RCA value	Interpretation
0< RCA ≤ 1	No comparative advantage
1< RCA ≤2	Weak comparative advantage
2 < RCA ≤ 4	Moderate comparative advantage
RCA > 4	Strong comparative advantage

Source: Hinloopen and Van Marrewijk, 2001

2.4 Determinants of India's agricultural export to SAFTA nations

To identify the key factors influencing India-SAFTA trade relations, this study employed an augmented gravity model. The gravity model of international trade, introduced by Jan Tinbergen (1962), Pöyhönen (1963), and Pulliainen (1963),

posits that trade relations between two nations are directly proportional to their economic size, specifically GDP, and inversely related to the distance between them.

The Poisson Pseudo Maximum Likelihood (PPML) method (Silva and Tenreyro, 2006) was used instead of simple OLS regression, as missing data or zero trade values are common in agriculture. The OLS regression involves the log transformation of both independent and dependent variables; however, since the log of zero is undefined, this can lead to bias in the analysis. PPML is better suited here as it only considers the log transformation of the independent variable, not the dependent one. Additionally, PPML can handle the violation of the homoscedasticity assumption.

Based on the literature, this study identifies nine explanatory variables, including three dummy variables, which could influence India's agricultural exports to SAFTA nations. The augmented gravity model with the PPML method is written as:

$$Y_{ijt} = \alpha + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 \ln Dis_{ij} + \beta_4 GDPC_{jt} + \beta_5 Exr_{jt} + \beta_6 TO_{jt} + \beta_7 SAFTA_{ijt} + \beta 8 Comlang_{ij} + \beta 9 Comcol_{ij} + \varepsilon$$

Where,

Y_{ijt} = India's agricultural export to SAFTA nations
$\ln GDP_{it}$ = Log transformation value of India's GDP at time 't'
$\ln GDP_{jt}$ = Log transformation value of partner's GDP at time 't'
$\ln Dis_{ij}$ = Log transformation value of the distance between India and its partner
$GDPC_{jt}$ = Per capita GDP of partner at time.
Exr_{jt} = Exchange rate of partner at time 't'
TO_{jt} = Trade openness of partner at time 't'
Dummyvariables : $SAFTA_{ijt}$ = Binary variable if t is after or 2006=1, 0 otherwise
$Comlang_{ij}$ = Binary variable if India and the partner share a common language, then 1, 0 otherwise
$Comcol_{ij}$ = Binary variable if India and the partner share a common colony, 0 otherwise

III

RESULTS AND DISCUSSION

3.1 Trends and share of India's agricultural trade with SAFTA nations

To understand the trends of India's agricultural trade to SAFTA nations over the last 29 years, the trends have been analysed. Figure 1 illustrates that the formation of SAFTA has significantly increased India's agricultural exports to SAFTA nations. Although imports have not increased significantly, a probable reason for this can be

the lower production and export potential of other SAFTA nations, as many of them are LDCs.

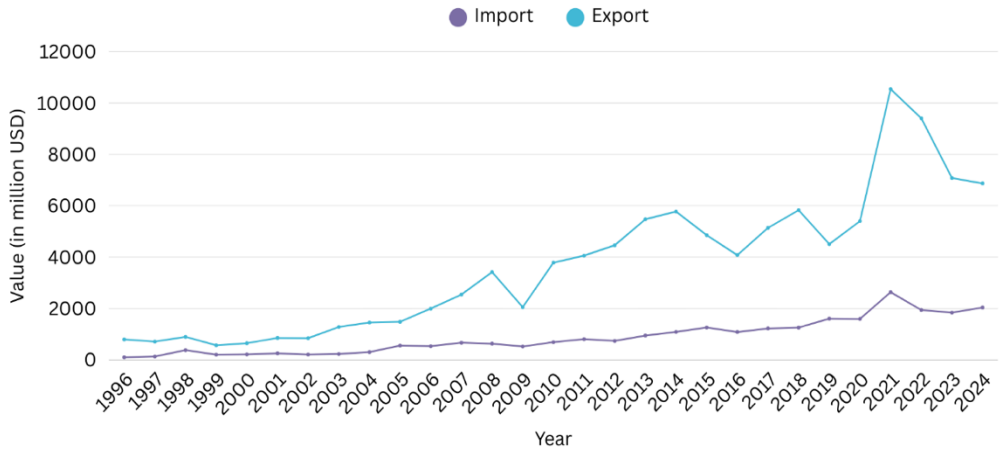

FIGURE 1. TREND IN INDIA'S AGRICULTURAL TRADE WITH SAFTA

In the export trend, a decline is observed in the years 2008 and 2019. The most likely reasons for this dip are the global financial crisis of 2008 and the COVID-19 pandemic, both of which were influenced by broader geopolitical and economic conditions.

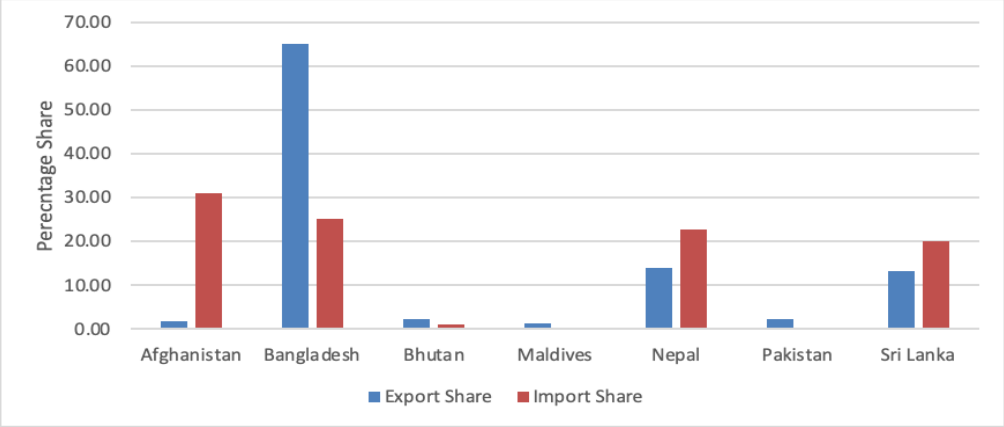

FIGURE 2. INDIA'S AGRICULTURAL TRADE WITH SAFTA NATIONS, 2022-24

Figure 2 highlights that Bangladesh (65.09%) has emerged as India's major agricultural export partner in recent years, followed by Nepal (13.91%) and Sri Lanka (13.27%). The share of other countries remains relatively small, which may be attributed to factors such as lower purchasing power, political instability, and cross-border conflicts. With respect to India's import share from SAFTA nations,

Afghanistan holds the highest position (31.07%), followed by Bangladesh (25.10%), Nepal (22.81%), and Sri Lanka (19.91%). This dominance of Afghanistan can largely be attributed to India's heavy dependence on Afghan exports of nuts.

3.2 India's Agricultural Trade Composition with SAFTA Nations

Table 1 highlights that Cotton Yarn (HS 5205) has emerged as the leading export commodity of India to SAFTA nations in recent years, accounting for 21.47% of the total share. Cane and Beet Sugar (HS 1701) and Raw Cotton (HS 5201) also hold significant export shares, followed by other products listed in the table.

TABLE 1. MAJOR AGRICULTURAL COMMODITIES TRADED BY INDIA WITH SAFTA (2022-2024)

Export Commodity	HS Code (4 -digit)	Share (%)	Import Commodity	HS Code (4 -digit)	Share (%)
Cotton Yarn	5205	21.47	Nuts	0802	7.66
Cane and Beet sugar	1701	11.05	Lac	1301	7.44
Raw cotton	5201	10.51	Tropical Fruits	0804	6.75
Rice	1006	7.66	Non-alcoholic beverages	2202	6.45
Maize	1005	5.79	Vegetable oil	1515	6.08
Wheat	1001	4.54	Pepper	0904	5.72
Onion, Shallots and Garlic	0703	4.14	Animal feed	2309	5.40
Pepper	0904	3.32	Palm oil	1511	5.21
Leguminous Crop	0713	3.07	Jute	5303	5.01
Oil cakes	2306	2.39	Soybean oil	1507	4.67

On the import side, Nuts (HS 0802) account for the highest share (7.66%), slightly above Lac (HS 1301) with 7.44%. These are followed by tropical fruits, non-alcoholic beverages, and other commodities mentioned in the table.

3.3 Growth and Instability of India's agricultural export to SAFTA nations

The Compound Annual Growth Rate (CAGR) analysis of India's agricultural exports to SAFTA nations reveals notable differences across phases. Before the implementation of SAFTA, India recorded strong export growth to Afghanistan and Nepal, though this period was marked by considerable instability (Figure 3). Such high growth combined with instability suggests the presence of volatile trade relations. Export volatility was the highest with Bhutan (68.57%), followed by Pakistan (51.64%). It is important to note that Afghanistan was not a founding member of SAFTA and only joined in 2012; hence, its export growth during the SAFTA implementation phase remained relatively low (4.93%). A major setback occurred in India's exports to Nepal during this phase, as the Nepalese government imposed an Agriculture Reform Fee (ARF) of 5-9% on Indian agricultural exports.

Surprisingly, India's export growth rate also declined for Bhutan and the Maldives in the same period. By contrast, for Bangladesh, Pakistan, Sri Lanka, and SAFTA nations as a whole, India's agricultural exports recorded higher growth compared to the pre-SAFTA phase. However, during the SAFTA consolidation and challenges

phase, India's export growth declined for most member countries (except Afghanistan and Bhutan) and for SAFTA as a whole, reflecting the impact of various structural and policy challenges highlighted earlier. In particular, India's agricultural export growth to Pakistan turned negative (–21.24%) during this phase due to severe political instability and persistent cross-border conflicts.

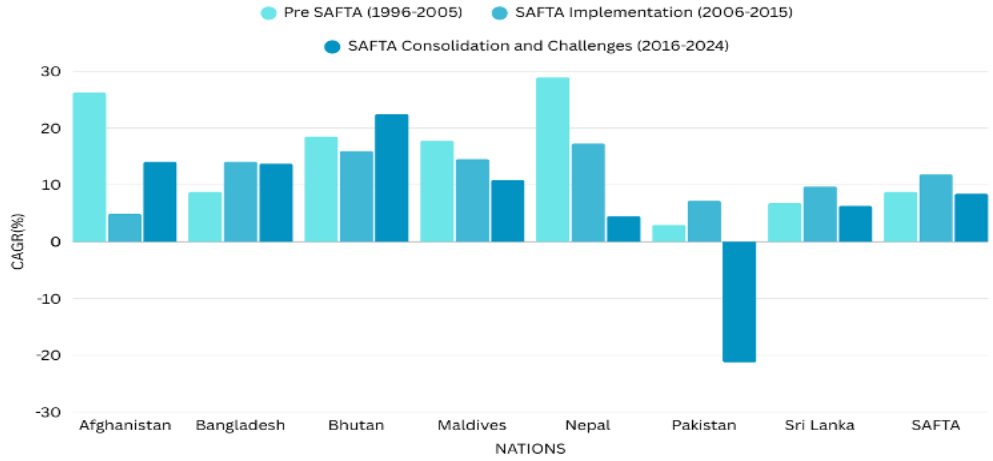

FIGURE 3. CAGR OF INDIA'S AGRI EXPORT TO SAFTA NATIONS, 1996-2024

India's agricultural exports to Pakistan have consistently remained volatile, with volatility recorded at 51.64% in the pre-SAFTA phase and rising further to 56.71% in the SAFTA consolidation and challenges phase. A similar trend of increasing volatility was observed in India's exports to Afghanistan across the phases. In contrast, India's exports have become relatively stable over time for Sri Lanka, the Maldives, Nepal, Bhutan, and SAFTA as a whole. However, a slight increase in volatility is noted in India's exports to Bangladesh during the last phase (35.37%) compared to the earlier two phases (Figure 4).

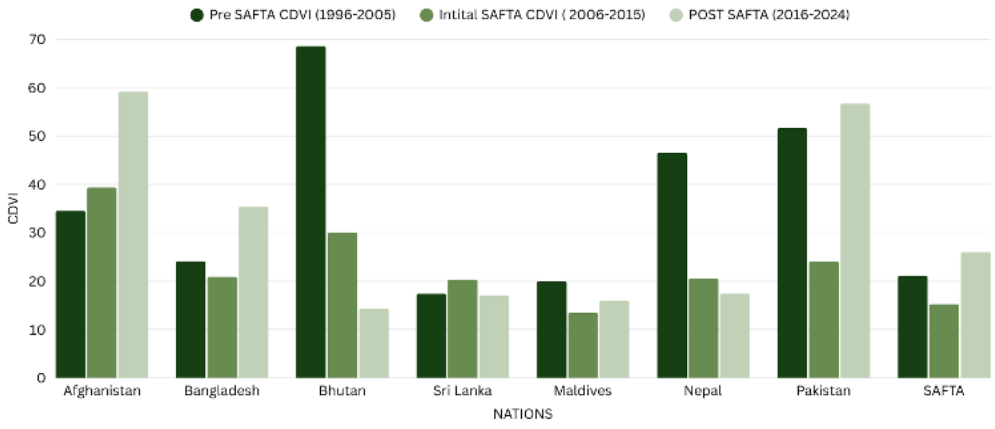

FIGURE 4. INDIA'S AGRICULTURAL EXPORT INSTABILITY TO SAFTA NATIONS, 1996-2024

Regarding India's imports, they show uneven and mixed outcomes across South Asian nations, with initial promising improvements often giving way to stagnation (Figure 5). Before the implementation of SAFTA, most member nations, including Afghanistan, Bangladesh, Nepal, and Sri Lanka, recorded positive CAGRs, with Bhutan and Sri Lanka exhibiting robust growth.

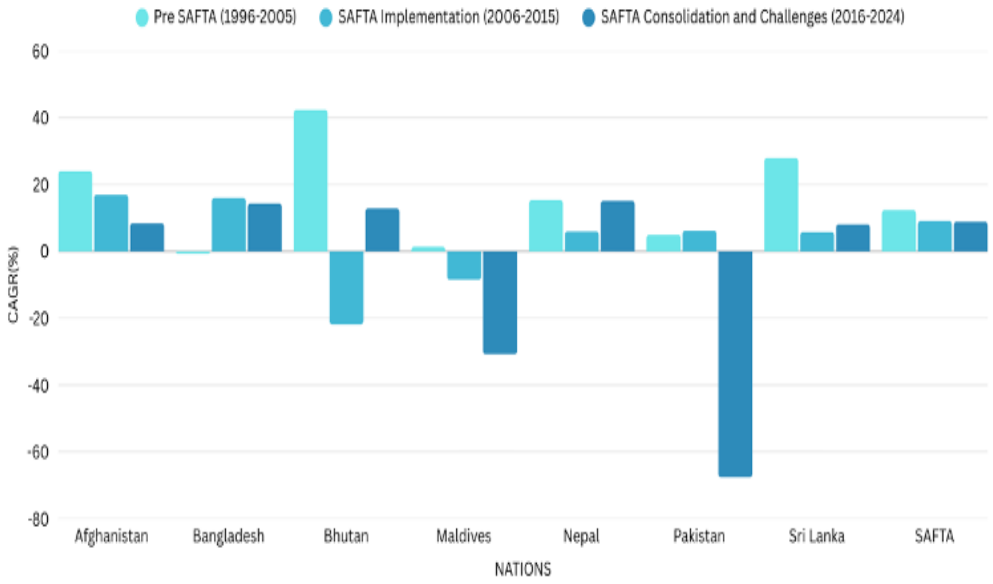

FIGURE 5. CAGR OF INDIA'S AGRICULTURAL IMPORTS FROM SAFTA NATIONS,1996-2024

During the SAFTA implementation phase, India's agricultural imports from countries such as Bangladesh and Nepal registered faster growth, whereas Bhutan and the Maldives experienced slower growth. By contrast, Pakistan's CAGR remained significantly negative throughout this period. During the consolidation and challenges phase (2016-2024), most nations reported either declining or stagnant CAGRs compared to earlier decades, with Pakistan's growth rate remaining sharply negative. Overall, India's agricultural imports from the SAFTA region demonstrated a moderate but steady CAGR over time, suggesting that while SAFTA contributed to stabilising trade, it did not translate into substantial growth across all member nations.

India's agricultural imports from SAFTA nations exhibited high instability during the pre-SAFTA phase, particularly for Afghanistan, the Maldives, Pakistan, Sri Lanka, and SAFTA as a whole (Figure 6). During the SAFTA implementation phase, imports from most countries, except Bhutan and Bangladesh, became more stable. However, in the SAFTA consolidation and challenges phase, imports from the

Maldives, Nepal, and Pakistan again became volatile. Despite this, imports from Afghanistan, Bangladesh, Sri Lanka, and SAFTA as a whole remained relatively stable over the years.

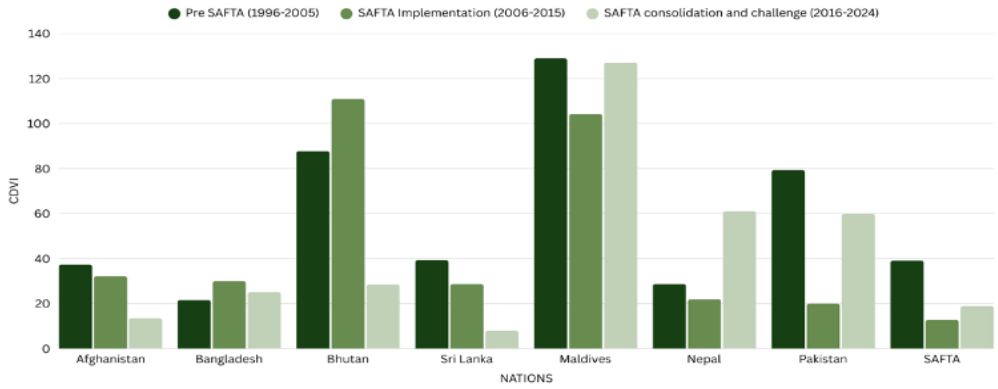

FIGURE 6. INDIA'S AGRICULTURAL IMPORT INSTABILITY FROM SAFTA NATIONS, 1996-2024

3.4 Agricultural Trade Intensity between India and SAFTA Nations

India's export and import intensity with SAFTA nations as a whole remained above five across all three time periods (Table 2), indicating that India has maintained relatively strong trade relations with SAFTA countries compared to other regions. Export intensity consistently exceeded import intensity in all periods, showing that India has been more export-oriented towards SAFTA nations throughout the study period. Country-wise analysis reveals that for the Maldives, Sri

TABLE 2. INDIA'S AGRICULTURAL TRADE INTENSITY TO SAFTA NATIONS,1996-2024

Country	Trade Intensity	1996-2005	2006-2015	2016-2024
Afghanistan	EII	3.24	2.62	2.04
	III	43.59	45.39	31.37
Bangladesh	EII	16.51	8.22	8.44
	III	6.08	7.44	10.25
Bhutan	EII	41.47	35.37	32.96
	III	48.36	26.32	54.93
Nepal	EII	18.51	21.36	18.06
	III	106.08	61.15	50.67
Maldives	EII	4.19	5.57	4.93
	III	0.08	0.08	0.03
Sri Lanka	EII	10.18	9.64	9.15
	III	3.90	6.38	5.48
Pakistan	EII	2.66	4.06	1.57
	III	2.44	1.54	0.42
SAFTA	EII	18.46	8.79	15.27
	III	14.61	5.10	7.62

Lanka, and Pakistan, India's export intensity was higher than import intensity across all periods, highlighting that these countries largely depend on India for their

agricultural imports. In contrast, India's imports from Afghanistan exceeded its exports to that country, confirming the earlier observation that India relies heavily on Afghanistan for certain agricultural commodities. For Bangladesh, India's export intensity was higher than import intensity in the first two periods; however, in the last period, import intensity slightly surpassed export intensity, suggesting that Bangladesh is gradually emerging as a stronger trade partner for India. In Bhutan, export intensity surged above import intensity during the SAFTA implementation phase. This may be attributed to Bhutan's focus on the energy sector during that period, which likely reduced its competitiveness in agricultural exports.

For Nepal, India's export intensity remained below import intensity throughout most of the analysis period. The Agriculture Reform Fee (ARF) of 5–9% imposed by Nepal in 2010 on Indian agricultural exports is likely a significant factor. Nevertheless, India's export intensity to Nepal has been gradually increasing, approaching its import intensity over time.

3.5 India's export competitiveness of top agricultural commodities to the SAFTA nations

This study analysed that, in all phases of pre-SAFTA, SAFTA implementation, and the SAFTA consolidation and challenge phase, India managed to maintain a moderate comparative advantage for cotton yarn (Figure 7). Though comparative advantage was decreased in the second phase, it's again gaining momentum. India's comparative advantage is also higher than that of many other top global exporters of cotton yarn, such as Turkey, China, and Pakistan, in the SAFTA nations. For sugarcane and sugar beet exports, India has historically held a weak comparative advantage, though it has been gradually improving over the years (Table 3). Global competitors, such as Brazil, the UAE, and Pakistan, continue to maintain a stronger export advantage over SAFTA nations than India.

In the case of raw cotton and maize, India had a low comparative advantage during the pre-SAFTA period. However, following the implementation of SAFTA, India's export advantage in these commodities increased significantly, reaching moderate levels in the last two phases, although a slight decline is observed in the final phase. Despite this, countries such as Benin, the United States, and Brazil remain more competitive in raw cotton exports, while Brazil and Pakistan dominate in maize exports to SAFTA nations.

For paddy, India enjoyed a strong comparative advantage before the implementation of SAFTA. Still, its advantage declined after the agreement, with Pakistan emerging as a strong competitor in rice exports to SAFTA nations. For wheat, India has maintained a relatively low comparative advantage across all three phases, likely due to intense competition from global leaders such as Canada and Ukraine.

TABLE 3. RCA OF INDIA AND COMPETITORS IN TOP AGRICULTURAL PRODUCT, 2024

HS Code	Product Name	Country	RCA value
5205	Cotton Yarn	India	2.84
		Turkey	1.80
		China	1.18
		Pakistan	0.55
1701	Canes and Beet Sugar	Brazil	4.66
		UAE	2.88
		Pakistan	1.32
		India	1.12
5201	Raw Cotton	Benin	7.32
		USA	5.15
		Brazil	2.33
		India	0.76
1006	Paddy	Pakistan	6.91
		India	1.81
		China	0.46
		Thailand	0.11
1005	Maize	Brazil	3.74
		Pakistan	1.82
		India	1.12
		USA	0.77
1001	Wheat	Ukraine	15.23
		Canada	14.58
		EU	3.57
		India	0.09
0703	Onion, Shallots and Garlic	China	3.08
		Uzbekistan	2.41
		Pakistan	1.40
		India	1.36
0904	Pepper	Vietnam	4.99
		India	3.44
		Brazil	1.05
		China	0.18
0713	Pulses	Australia	6.99
		Uzbekistan	5.85
		Canada	5.15
		India	0.58
2306	Oil Cakes	India	3.49
		Malaysia	2.33

For onions, shallots, garlic, and leeks, India's comparative advantage has been decreasing over time, while China, Uzbekistan, and Pakistan have emerged as major competitors. Similarly, for pepper and oil cakes, India maintains a moderate comparative advantage; however, the RCA values declined during the SAFTA consolidation and challenges phase compared to the implementation phase. Vietnam and Malaysia have emerged as significant competitors for these products.

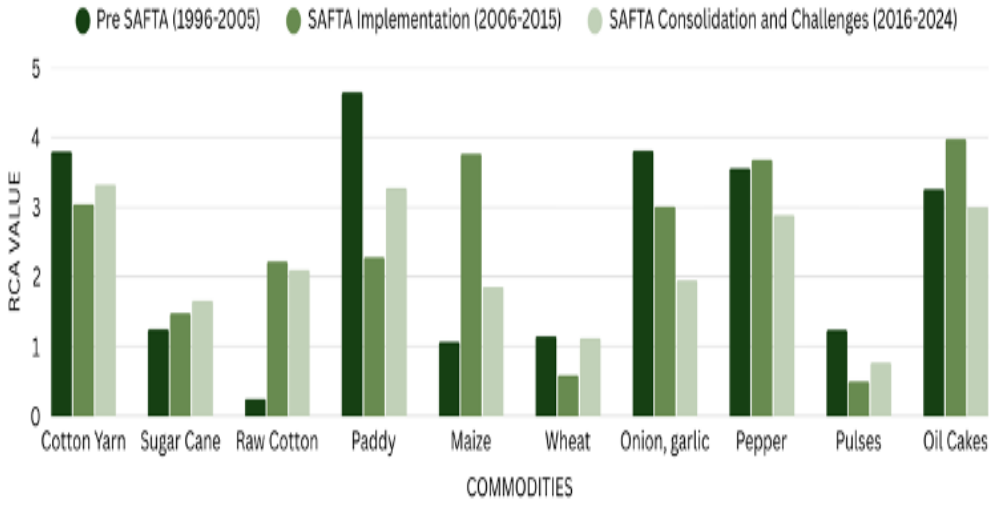

FIGURE 7. RCA OF INDIA'S TOP AGRICULTURAL PRODUCT EXPORT TO SAFTA NATIONS,1996-2024

Although dried leguminous vegetables rank among India's top ten export commodities, the country's comparative advantage in this sector remains very low compared to other global competitors such as Australia, Canada, and Uzbekistan.

3.6 Determinants of India's agricultural export to SAFTA nations

Using the Poisson Pseudo Maximum Likelihood (PPML) estimation, the analysis indicates that India's agricultural exports are positively related to both India's and the partner country's GDP (Table 4). Specifically, India's GDP is significant at the 10% level. In comparison, the partner country's GDP is significant at the 1% level, confirming that as the economic mass of both nations increases, India tends to export more consistently, in line with our model assumptions. The theoretical framework supports this finding and is consistent with similar conclusions in the studies by Renjini et al. (2017) and Saxena et al. (2024).

The distance between India and its SAFTA partner country has a statistically significant negative effect on agricultural exports (at the 1% level), indicating that trade decreases as distance increases. This result is also consistent with model assumptions and existing studies done by Dembatapitiya and Weerahewa (2015) and

Das et al. (2025). The partner country's exchange rate, per capita GDP, and trade openness were found to be statistically non-significant.

TABLE 4. GRAVITY MODEL REGRESSION RESULTS (PPML ESTIMATION)

Dependent variable: Export value (000 USD)

Variable	Coefficient	Z statistic
$\mathbf{lnGDP_{it}}$	0.5032*	1.85
	(0.2712)	
$\mathbf{lnGDP_{jt}}$	0.8429***	6.12
	(0.1377)	
$\mathbf{lnDis_{ij}}$	-1.5769***	-3.68
	(0.4288)	
$\mathbf{Exr_{jt}}$	-0.0018	-1.05
	(0.0017)	
$\mathbf{GDPC_{jt}}$	7.72e-08	0.00
	(0.0001)	
$\mathbf{TO_{jt}}$	0.0015	0.17
	(0.0085)	
SAFTA	0.5659**	2.34
	(0.2422)	
Comlang	-3.1673***	-6.39
	(0.4957)	
Comcol	1.0553***	4.28
	(0.2464)	
Cons	13.5267	4.00
	(3.3776)	
Observation	3759	
Wald chi^2	495.66	
Pseudo R^2	0.3176	

Robust standard error in parentheses; *** p<0.01, **p<0.05, *p<0.1

Following the formation of SAFTA, India's agricultural exports to member countries increased significantly, with a 95% confidence level, suggesting that SAFTA has strengthened trade relations between India and other SAFTA nations. Historical factors also play a role: if both countries were under the same colonial rule, India's exports would generally be higher. For instance, India's export share to Bangladesh remains comparatively higher, likely due to shared colonial history and similar consumer preferences in Eastern Indian states such as West Bengal, Tripura, and Assam.

However, the study found an unexpected result: sharing a common language appears to have an adverse effect on trade, contrasting with findings from many previous gravity model studies. This may be explained by the fact that within SAFTA, India shares a common official language only with Pakistan, where historical political tensions and cross-border conflicts have significantly reduced India's agricultural exports over the years.

IV

CONCLUSION AND POLICY IMPLICATIONS

Following the establishment of SAFTA, empirical analysis indicates a pattern of moderate but steady growth in India's agricultural exports to member countries, particularly Bangladesh, Sri Lanka, and Nepal. In contrast, trade with nations such as Pakistan and the Maldives experienced fluctuations, largely due to political unrest and cross-border tensions.

The export intensity analysis highlights that India has consistently maintained a higher propensity to export to SAFTA nations than to import from them, underscoring the region's reliance on Indian agricultural products. Bangladesh has emerged as India's leading agri-export destination within SAFTA, while Afghanistan remains a primary source of imports, especially for nuts.

Analysis of revealed comparative advantage (RCA) shows that India holds a moderate to strong advantage in commodities such as cotton yarn, oil cakes, and pepper. However, it faces strong international competition in products such as wheat and onions from countries like China, Canada, and Ukraine. The gravity model results, estimated using the Poisson Pseudo Maximum Likelihood (PPML) approach, reveal that while greater geographic distance and the presence of a common language—particularly in the context of Indo-Pak relations—tend to reduce trade flows, the economic size of both partners and a shared colonial history significantly enhance India's agricultural trade with SAFTA nations.

Overall, SAFTA has contributed to the growth and stabilisation of India's agricultural trade with its neighbours. From a policy perspective, the benefits of regional integration could be further strengthened by promoting political stability, reducing non-tariff barriers, and enhancing the participation of least-developed countries. Sustained cooperation and trade facilitation remain crucial for maximising the long-term potential of SAFTA.

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