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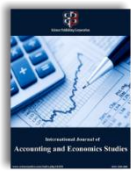

Trade Deficit Dilemma: Assessing AIFTA's Impact on India's Bilateral Trade

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Abstract

The study examines the AIFTA agreement's impact on bilateral trade volumes and deficits, implying that one may find that the agreement has a disproportionately positive impact on the ASEAN member states. The study employs a mixed-method approach to analyze structural changes-es in India's trade basket during the AIFTA period. It consists of a product-level analysis at the HS six-digit level for selected liberalized goods, along with a comparative study of MFN and FTA tariff rates to determine their impact on bilateral trade. The study highlights unequal FTA-MFN tariffs for palm oil and pepper, and an inverted duty regime for aluminum and copper, thus emphasizing the need to go deeper and carry out product-level analysis beyond trade deficit trends. Limited access to detailed preferential trade data restricts the ability of AIFTA to carry out empirical analysis. Further research will require more advanced datasets and deeper product-level analysis to adequately track its impact. The study contributes to the AIFTA literature by developing tariff analysis methods and performing case studies to create policy insights that would help in better tariff design under the Agreement.

Keywords: *ASEAN; FTA; Inverted Duty Structure; MFN; Trade; Trade Policy.*

1. Introduction

Freer trade is generally believed to be more beneficial for the economy (Wolla & Esenther, 2017; Gasiorek, et. al., 2019; Krugman, 2003), too notes that in today's globalized and integrated world, the economic policies of one country tend to impact other countries as well. To attain a globalized economy, we move away from the principle of Most Favoured Nation (MFN) as per GATT and the WTO framework, and we see the proliferation of Regional Trade Agreements (RTAs) or Free Trade Agreements (FTAs) throughout the world. These agreements could be bilateral or multilateral and provide market access to facilitate trade between the signing countries. (Stevens, Irfan, Massa, & Kennan, 2015) Concluded that FTA created a positive effect on at least 18 of the 19 primary studies examined by them. What started with the signing of agreements like NAFTA or the creation of the European Union has grown into multilateral agreements like the CPTPP or RCEP, to more bilateral agreements like the UK-Australia Free Trade Agreement or the India-Australia Economic Cooperation and Trade Agreement.

The main aim of such agreements is the deepening of economic and trade relations among the partner countries and utilizing the strengths of each other to improve the level of equilibrium they operate on. These agreements aim to enhance the market access of a country and provide an additional market to sell and source products/ goods. Kawai and Wignajara (2008) highlighted that FTAs created an improved business environment that usually promoted trade in goods and services and investment between the parties. Studies have also explored the relationship between FTAs and investment and indicated a positive impact on bilateral OFDI due to reducing the investment barrier, thereby stimulating investment (Yeyati et al.,2003; Baltagi et al., 2008; Medvedev, 2012; Markusen and Maskus, 2002; Lesher and Miroudot, 2006; Berger et al., 2013). However, it becomes critical to understand that imports could increase due to the removal of tariff barriers, and they could create the possibility of a rising trade deficit. Thus, with RTAs removing trade barriers and providing free market access for goods, trading under a trade agreement could become easier and cheaper, and supplement the rising trade deficits.

The Indian economy has been protected, characterized by high tariffs, export duties, and measures for import substitution in place. However, with the world moving towards a globalized one, India has seen notable changes to its trade policy stance and entered into bilateral trade agreements, which further reduced or even eliminated the high tariffs. Considering that India was a country with one of the highest tariffs in the world, after the reduction/ elimination of tariffs either unilaterally or bilaterally, there was an increase in the value and volume of India's imports. Thus, the additional tariff elimination over and above the MFN rates that India provided for under the FTAs can be a key determinant of India's rising trade deficit. However, the FTAs alone do not stand responsible for the widening trade deficit, as the economy is also undergoing numerous policy changes that unilaterally affect its tariff structure. Thus, this paper attempts to contribute towards providing an alternative approach to looking at trade deficits, which aims at going beyond just the absolute number of the trade deficit and studying the trade basket at a granular level, and seeing how tariff liberalization under the FTA interplays with the unilateral tariff structure.

This paper is as follows: Section II talks about how FTAs impact an economy and how the India-ASEAN FTA impacted the Indian economy. Section III provides the conceptual framework for the analysis. Section IV sheds light on the key points analyzed in the study, and Section V concludes the paper, providing the need to have an alternative approach towards trade deficit, where we move from the macro aspect to a more micro approach.

2. Literature Review

2.1. Theoretical Framework

- Comparative Advantage Theory (Founder: David Ricardo (1817)): The Comparative Advantage Theory suggests that countries boost their well-being by focusing on producing goods for which they have the lowest opportunity cost. This is true even if one country is better overall at making everything. Considering AIFTA, India benefits by focusing on areas like medicines and information technology, where it has a natural edge, while importing labor-intensive or resource-heavy products from ASEAN countries (Bernhofen et al., 2018). Basically, Ricardo's idea is that trade deficits can sometimes mean countries are using their resources efficiently. If India imports fewer final products, it might be doing so to fund exports of higher-value services or intermediate goods, taking advantage of its manufacturing strengths (Faccarello, 2015).
- Heckscher–Ohlin (H-O) Theory (Founders: Eli Heckscher (1919) & Bertil Ohlin (1933)): The Heckscher–Ohlin Theory explains trade patterns by looking at a country's relative factor endowments. Essentially, it suggests that nations tend to export goods that make extensive use of their abundant resources and import those that rely mainly on scarce factors (Lundahl, 2022). Considering the African-Indian Free Trade Agreement (AIFTA), India's comparative advantage in skilled labor and specific raw materials means it primarily exports goods that are resource- and skill-intensive, while importing products that are capital- or land-intensive (Oberoi, 2019). The Heckscher–Ohlin model helps clarify why reducing tariffs on intermediate inputs can lead to what we call 'productive deficits': India tends to import more raw materials and intermediate goods, using its plentiful workforce to support its export-driven, skill-intensive industries. This emphasizes the fundamental distribution of factors across sectors and economies (Zhang, 2017).
- Trade Creation and Diversion Theory (Founder: Jacob Viner (1950)): The Trade Creation and Diversion Theory helps us understand how customs unions impact welfare by examining changes in sourcing. Essentially, trade creation happens when lowering tariffs allows countries within the union to replace more expensive domestic products with cheaper imports. On the other hand, trade diversion occurs when trade shifts from more efficient global suppliers to less efficient local producers within the union, which can sometimes hurt overall welfare (Filip, 2017). Looking at Viner's theory, considering AIFTA, we see that some tariff cuts between India and ASEAN have helped boost trade by making intermediate goods more affordable. However, these same reductions have also caused trade to shift away from global suppliers to less efficient ASEAN partners, contributing to India's growing bilateral trade deficit (Huynh, et. al., 2022).

2.2. Review of Literature

2.2.1. Theoretical Debates on Regional Trade Agreements

The literature on Regional Trade Agreements (RTAs) is characterized by a longstanding debate over whether such agreements generate trade creation or trade diversion. Krueger (1999) was among the first to highlight the trade-diverting potential of Free Trade Areas (FTAs), arguing that preferential tariff reductions could encourage procurement from less efficient partners within the RTA, even when more efficient producers outside the bloc exist. Bergsten (1997) built on this critique, proposing that conditional Most-Favored-Nation (MFN) clauses be applied to investments and trade to curb free-rider distortions. Chow & Sheldon (2024) further emphasized that high remaining tariffs on labor-intensive products exacerbate diversion, as MFN nonmembers remain excluded from preferential rates. In contrast, Lawrence (1999) asserted that FTAs have expanded the frontiers of liberalization—encompassing services, investment, and other areas beyond the WTO's remit—thus delivering substantial trade-creating benefits (Perskaya et al., 2024).

2.2.2. Evolution and Scope of Modern RTAs

Since Article XXIV of GATT provides an exception to the MFN principle, RTAs have proliferated dramatically: by 2022, 355 such agreements were in force, each covering at least one WTO Member. Early RTAs focused narrowly on goods, but recent accords traverse an ever-widening domain—investment protection, labor standards, environmental provisions, government procurement, and digital commerce now routinely form part of package deals. Pal (2005); Goswami (2025). interprets this trend as driven by welfare incentives, dissatisfaction with multilateral deadlock, and the "bandwagon" appeal of regionalism. Empirical studies (e.g., Kawai & Wignaraja 2008; Yeyati et al. 2003; Baltagi et al. 2008; Medvedev 2012) document that modern FTAs boost bilateral foreign direct investment and deepen market integration, suggesting a broader strategic rationale beyond simple tariff elimination.

2.2.3. Empirical Evidence on The India–ASEAN Free Trade Agreement

India's earliest FTA in 1998 with Sri Lanka ushered in a wave of preferential pacts, culminating in the India–ASEAN Trade in Goods Agreement of 2010. Ex-ante analyses (Batra 2006) identified the India-ASEAN corridor as having the highest trade-potential among major regional pairings, with Pal & Dasgupta (2008, 2009) highlighting complementarities between India's services orientation and ASEAN's light manufacturing. However, early warnings by Bhattacharyya & Mandal (2010) and Francis (2011) suggested a potential deterioration in India's balance of trade, particularly in semi-processed and agricultural exports. Post-implementation, Sikdar & Nag (2011, 2018) conclude that although ASEAN members enjoyed positive terms-of-trade gains and unskilled labour benefited via higher employment and wages, Indian skilled workers and some producers faced adjustment costs. Later sectoral studies (Chandran & Sudarsan, 2012; Veeramani & Saini, 2011; Nagoor & Kumar, 2010) present mixed outcomes: gains in fisheries and plantation sectors contrasted with vulnerabilities in tea. Recent work (Bhattacharyya & Mandal, 2016; Singh, 2021; Khati & Chanwahn, 2023) underscores that while welfare effects are generally symmetric, ASEAN often captures larger trade and tariff benefits, and non-tariff barriers remain a significant obstacle to India's export growth.

2.3. Research Gap

The Regional Trade Agreements (RTAs) literature, pertaining to the India–ASEAN Free Trade Agreement, engenders considerable insights into various trade instigations, trade diversions, and welfare implications, but significant research gaps remain. Early works by Krueger (1999) and Bergsten (1997) paid particular attention to trade diversion effects in the preferential arrangement domain, whereas Lawrence (1999) has noted their potential for liberalization outside the WTO framework. Several empirical scientists, such as Batra (2006), Pal & Dasgupta (2008, 2009), and Sikdar & Nag (2011, 2018), did take trade dynamics and labor outcomes into consideration, yet these studies mostly use aggregate data, and this does not capture sectoral dynamics corresponding to emerging domains such as services, digital trade, and investment. The treatment of NTBs in Chow & Sheldon (2024) and Khati & Chanwahn (2023) is also static in nature, offering little or no insight into the evolution of these barriers over time, nor how NTBs discriminate in terms of the Indian labor segmentation, especially along skilled-unskilled lines. Another common feature of adverse effects studies is their overwhelming dependence on macroeconomic models such as CGE, thereby losing a lot of the realities that firms face and voluntarily excluding employable stakeholder and policymaker input. At a micro-level, a few sectoral studies do exist (e.g., Veeramani & Saini 2011; Chandran & Sudarsan 2012), though general stakeholder analyses are lacking. Despite evidence from Bhattacharyya & Mandal (2016) and Singh (2021) that ASEAN countries are the richer beneficiaries, literature has neglected the issue of income disparity dynamics and regionally unbalanced growth within and between member countries. This necessitates a more pragmatic alternative to the purely academic modeling. This research aims to address the above gaps by disaggregating trade effects between key sectors, tracking the evolution of NTBs. In this way, the study hopes to offer a starkly more pragmatic, participatory, and policy-oriented view of the long-term ramifications of the India–ASEAN FTA.

3. Research Objectives & Questions

Research Objectives
Obj1: To evaluate how the India-ASEAN Free Trade Agreement has influenced India's trade structure by examining tariff reductions, shifts across sectors, and changes in the composition of exports and imports at the product level.
Obj2: To examine the composition of India's trade with ASEAN by stages of processing and evaluate its alignment with tariff liberalization categories under the India-ASEAN FTA.
Obj3: To evaluate the implications of MFN and FTA tariff differentials on India's trade with ASEAN, with a focus on preference utilization, tariff efficiency, and the emergence of inverted duty structures.
Research Question
Q1. How has the India–ASEAN Free Trade Agreement reshaped India's trade structure in terms of tariff reductions, sectoral shifts, and product-level changes in exports and imports?
Q2. What is the distribution of India's trade with ASEAN across stages of processing (raw, intermediate, final), and how does this distribution correspond to the FTA's tariff liberalization categories?
Q3. In what ways do differentials between MFN and FTA preferential tariffs influence India–ASEAN trade, particularly with respect to preference utilization rates, tariff efficiency, and the occurrence of inverted-duty scenarios?

4. Conceptual Framework

With ASEAN now ranking as India's fourth-biggest economic partner and contributing around 10% of India's international trade, AIFTA has benefited both sides (Chapman, 2018). But after the FTA, ASEAN's portion of India's overall trade imbalance increased from 7% to 12% (Rai, 2019). Whenever the value of imports exceeds the value of exports, a country has a trade deficit vis-à-vis that trading partner. The trade deficit is a parameter for defining and categorizing the bilateral trade relationship as either favorable or unfavorable. A rising trade deficit is an indication of increased import dependence and reduced domestic production. Moreover, if the trade deficit exists with an FTA partner, the possibility of an FTA skewed in favor of the partner country arises. It is here that there is a need to restructure the concept of understanding what a trade deficit signifies for an economy. Yes, the trade deficit indicates that imports outshine exports in the period under analysis, but the aggregate figures fail to identify the composition of trade itself and ascertain if the good is of utility or need or is just another consumer good.

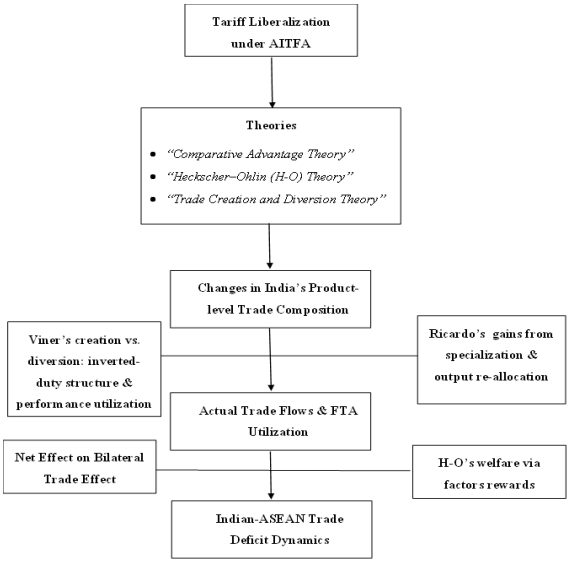

Fig. 1: India's Trade with ASEAN.

Source: Author's elaboration.

Figure 1 displays a sketch of the conceptual framework developed to elucidate the effect of tariff liberalization under the AITIGA (ASEAN-India Trade in Goods Agreement) framework. The key trade theories, including Comparative Advantage, Heckscher-Ohlin, and Trade Creation and Diversion, are amalgamated to analyze changes in India's product-level trade composition. Effects are evaluated through trade-flow utilization, inverted-duty-structure, Viner's trade-creation, and trade-diversion theory and are, in turn, linked to bilateral trade outcomes, welfare gains, and India-ASEAN trade deficit phenomena.

The study understands that a trade deficit, particularly when seen vis-à-vis an FTA partner, would reflect not just the value and volume of trade, but also how changes to the tariff structure affect the trade dynamics. In the absence of preferential trade data, we focus on analyzing the unilateral tariff structure. i.e., "MFN tariffs and the preferential tariff structure (FTA)" tariffs. To analyze the trade data at a granular level, it is essential to understand the interplay between the MFN and the FTA tariff structure. The mere presence of a trade deficit cannot determine the impact it has on the economy; there is thus a need to understand the composition of the goods contributing to this deficit.

5. Result

5.1. Decoding India-ASEAN Trade

"Obj1: To assess the impact of the India-ASEAN Free Trade Agreement on India's bilateral trade structure, focusing on tariff liberalization, sectoral shifts, and changes in export-import composition at the product level."

India's trade with ASEAN

"The India-ASEAN FTA was signed in 2010, and it was fully implemented by 2019." Both countries offered liberalization in tariffs, with the concessions under the agreement being offered under 3 broad categories of tariff elimination, tariff reduction, and the exclusion list. The tariff elimination is categorized into two tracks, i.e., "Normal Track 1 (NT-1) and Normal Track 2 (NT-2)," with tariff elimination being completed over 3 and 6 years, respectively. The tariff reduction is implemented through the categories of Special Products (SP) and Sensitive Track (ST), where the tariffs are not eliminated but reduced to a certain percentage. The third category is the Exclusion List (EL), with no tariff elimination, and the MFN on the day of import as applicable would be applied.

Under the agreement, India offered the ASEAN countries market access for around 88 percent of its tariff lines, which is inclusive of both the tariff elimination (74 percent) and the tariff reduction (14 percent) categories (Table 1). The ASEAN member countries have individually offered India their market access offers, which vary from 100 percent access in the case of Singapore to a low of around 70 to 75 percent for some of the ASEAN countries like Vietnam.

Table 1: India's Tariff Reductions to ASEAN Under the Free Trade Agreement Between India and ASEAN

Modality	Description of Modality	No. of Products at Tariff Line	Share (%)
NT-1	"Applied MFN tariff rates for tariff lines will be eliminated in 3 years."	7450	65%
NT-2	"Applied MFN tariff rates for tariff lines will be eliminated in 6 years."	1098	9%
Special Products	"Applied MFN tariff rates will be reduced following the tariff reduction schedules."	40	0.35%
ST	"Applied MFN tariff rates above five percent for tariff lines will be reduced to five percent."	1595	14%
EL	"Subject to an annual tariff review to improve market access"	1338	12%
	Total	11521	100%

Source: Author's compilation, based on the text of the India-ASEAN FTA. For this tabulation, the number of India's tariff lines as per HS 2012, i.e., 11521, has been used.

At the macro level, "the total trade with ASEAN has been on the rise, and India has had a trade deficit with the ASEAN countries even before the FTA was signed (Figure 2). Though initially, the level of trade deficit vis-à-vis the ASEAN countries was within the range of USD 5 to 7 billion, post the implementation of the FTA, it has risen to around USD 23 billion in 2019-20." It is further seen that in 2011-12, the year following the implementation of the FTA, there was a jump in the overall trade between the countries, with exports witnessing a growth of around 43 percent and imports growing by 38 percent. However, in the post-FTA period since 2011, the annual average growth rate of imports (9 percent) has outshone the exports (8 percent).

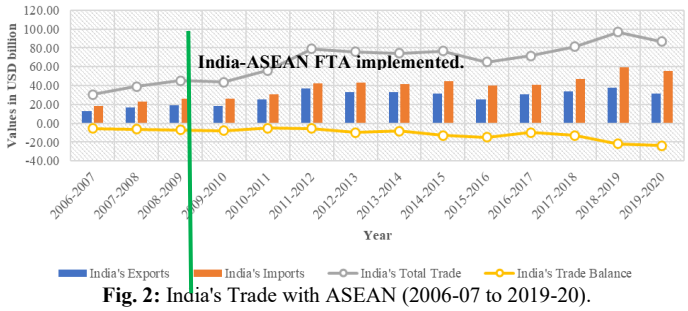

Fig. 2: India's Trade with ASEAN (2006-07 to 2019-20).

Source: Author's compilation, based on data from the Ministry of Commerce & Industry, GOI

"Moreover, relative to the pre-FTA era (2009-10), India's Trade Balance as a percentage of Total Trade with ASEAN in the post-FTA decade (2019-20) rose from 17.5 to 27.4. It is crucial to recognize that as the economy expands, its ability to sustain deficits also rises."

Table 2 illustrates the proportion of India's top ten sectors in ASEAN exports during the pre-FTA (2009–10) and post-FTA (2019–20) periods. In the pre-FTA era, the leading 10 industries comprised more than 67 percent. The predominant sector was "Mineral Fuels, Oils, and Products (HS 27), followed by Ships, Boats, and Floating Structures (HS 89) at 8.5 percent and Miscellaneous Goods (HS 99) at 6.1 percent." The proportion of the top 10 industries in total exports remained unchanged in the post-FTA era. Additionally, "HS 84, Nuclear Reactors, Boilers, Machinery and Mechanical Appliances (7.9 percent) and HS 2, Meat and Edible Meat Offal (6.2 percent) have supplanted HS 27, Mineral Fuels, Oils, and Products (19.9 percent)." The composition and sequence of the top 10 export sectors have altered in both rounds.

Table 2: India's Chapter-wise Exports to ASEAN (Values in USD Million)

Rank	Pre-FTA HS 2-digit	Description	Value	Share	Post-FTA HS 2-digit	Description	Value	Share
1	27	Mineral Fuels, Mineral Oils, And Products	4,080.74	22.5%	27	Mineral Fuels, Mineral Oils, And Products	6,290.24	19.9%
2	89	Ships, Boats, And Floating Structures.	1,539.91	8.5%	84	Nuclear Reactors, Boilers, Machinery & Mechanical Appliances.	2,505.09	7.9%
3	99	Miscellaneous Goods.	1,102.56	6.1%	2	Meat & Edible Meat Offal.	1,947.66	6.2%
4	71	Gems & Jewellery	973.29	5.4%	29	Organic Chemicals	1,947.20	6.2%
5	84	Nuclear Reactors, Boilers, Machinery, And Mechanical Appliances; Parts Thereof.	919.66	5.1%	72	Iron And Steel	1,868.16	5.9%
6	85	Electrical Machinery & Equipment & Parts Thereof	897.5	5.0%	89	Ships, Boats, And Floating Structures.	1,665.31	5.3%
7	29	Organic Chemicals	894.03	4.9%	76	Aluminium And Articles Thereof.	1,485.14	4.7%
8	23	Residues And Waste From The Food Industries: Prepared Animal Feed.	752.63	4.2%	87	Vehicles Other Than Railway Or Tramway Rolling Stock, And Parts And Accessories Thereof.	1,348.96	4.3%
9	72	Iron And Steel	588.14	3.2%	71	Gems & Jewellery.	1,322.09	4.2%
10	2	Meat And Edible Meat Offal.	550.69	3.0%	85	Electrical Machinery & Equipment & Parts Thereof	1,032.77	3.3%
	The sum of the Top Ten Export Sectors		12,299.15	67.9%	The sum of the Top Ten Export Sectors		21,412.62	67.9%
	Total Exports		181125.8		Total Exports		31,545.03	

Source: Author's compilation, based on data from DGCI&S.

During the period before the Free Trade Agreement (2009–10), India's exports to ASEAN in the 8-digit HS tariff lines included products such as motor spirits, high-speed diesel, and returned goods. Approximately 506 product categories, valued at USD 16.30 billion, accounted for about 90% of the total exports to ASEAN. After the implementation of the FTA in 2019–2020, India's key exports to ASEAN expanded to include items like aluminum ingots, boneless bovine meat, and high-speed diesel motors. A total of 712 product categories, totaling USD 28.39 billion, represented roughly 90% of India's export value to the region.

"Table 3 below represents the share of the top 10 sectors of India's imports from ASEAN in the Pre-FTA (2009-10) and Post-FTA (2019-20) period. The top 10 sectors in the pre-FTA period accounted for 82.6 percent of India's total imports from ASEAN. Major sectors included HS 27, Mineral Fuels, Oils and Products (24.7 percent); HS 15, Animal or Vegetable Fats and Oils and Their Cleavage Products (16.4 percent), and HS 85, Electrical Machinery and Equipment and Parts Thereof (9.2 percent). In the post-FTA period, the share of the top 10 sectors' imports has declined to 76 percent. Further, HS 27, Mineral Fuels, Oils and Products (20 percent) remained at the top, followed by HS 85, Electrical machinery and equipment and parts thereof (15 percent), and HS 84, Nuclear Reactors, Boilers, Machinery and Mechanical Appliances (10 percent). There has been a slight change in the composition and ranking of the sectors over the two periods."

Table 3: India's Chapter-wise Imports from ASEAN (Values in USD Million)

Rank	Pre-FTA Period HS 2-digit	Description	Value	Share	Post-FTA Period HS 2-digit	Description	Value	Share
1	27	Mineral Fuels, Oils & Products	6,374.28	24.7%	27	Mineral Fuels, Oils & Products	11,487.79	20.7%
2	15	Animal or Vegetable Fats & Oils & Their Cleavage Products	4,233.83	16.4%	85	Electrical Machinery & Equipment & Parts Thereof	8,760.94	15.8%
3	85	Electrical Machinery & Equipment & Parts Thereof	2,375.56	9.2%	84	Nuclear Reactors, Boilers, Machinery & Mechanical Appliances	5,604.97	10.1%
4	84	Nuclear Reactors, Boilers, Machinery & Mechanical Appliances	2,353.14	9.1%	15	Animal or Vegetable Fats, Oils & Their Cleavage Products	5,060.15	9.1%
5	29	Organic Chemicals	1,323.55	5.1%	39	Plastic & Articles Thereof	2,334.82	4.2%
6	26	Ores, Slag & Ash	1,120.86	4.3%	29	Organic Chemicals	2,321.40	4.2%
7	89	Ships, Boats & Floating Structures.	975.45	3.8%	89	Ships, Boats & Floating Structures.	2,000.30	3.6%
8	44	Wood & Articles of Wood	960.58	3.7%	72	Iron & Steel	1,800.06	3.3%
9	7	Edible Vegetables & Certain Roots & Tubers	896.46	3.5%	74	Copper & Articles Thereof	1,386.50	2.5%
10	39	Plastic & Articles Thereof	706.45	2.7%	90	Optical, Photographic, Measuring, Medical or Surgical Instrument & Apparatus	1,303.50	2.4%
	Sum of Top Ten Import Sectors		21,320.16	82.6%	Sum of Top Ten Import Sectors	42,060.43		76.0%
	Total Imports		257797.96		Total Imports	55,369.87		

Source: Author's compilation, based on data from DGCI&S.

During the period before the Free Trade Agreement (FTA) came into effect in 2009–10, India's imports from ASEAN at the detailed 8-digit HS level included various commodities such as copper ores, steam coal, crude palm oil, and petroleum oils. Overall, about 90% of ASEAN imports at this detailed level encompassed 375 product categories, with a total value of approximately USD 23.21 billion. In the subsequent years, 2019–2020, after the FTA was implemented, India's imports from ASEAN at the same HS 8-digit level mainly comprised petroleum oil, steam coal, and crude oil. Interestingly, the core product categories of imports remained largely unchanged before and after the FTA, totaling 540 different product lines and accounting for USD 49.84 billion, which represents about 90% of the total import value.

5.2. Structure of Trade: Stages of Processing

"Obj2: To examine the composition of India's trade with ASEAN by stages of processing and evaluate its alignment with tariff liberalization categories under the India-ASEAN FTA."
The macro level figures reflect the overall position of "trade between India and ASEAN," however, to break down what is imported, stages of processing (SoP) as defined by UN COMTRADE have been used. The UN COMTRADE has categorized the goods traded at the HS 6-digit level under 4 broad groups: consumer items, capital items, intermediary goods, and basic materials. For this analysis, the SoP as defined at HS 2012 nomenclature has been used.

Table 4: Structure of India's Trade with ASEAN: Based on Stages of Processing at HS 6-digit

SoP	No. of HS 6-digit lines	Share (%)	India's Imports from ASEAN (avg 2016-2018) USD million	Share (%)	India's Exports to ASEAN (avg 2016-2018) USD million	Share (%)
Raw materials	688	13.23%	11.62	24.93%	6.07	18.85%
Intermediate goods	2106	40.51%	17.50	37.53%	9.16	28.43%
Capital goods	926	17.81%	10.55	22.63%	5.21	16.17%
Consumer goods	1479	28.45%	6.95	14.91%	11.77	36.56%
Total	5199	100%	46.62	100%	32.21	100%
Total no. of lines/ India's Trade	5205		436.11		293.08	

Source: Authors' compilation, based on data from UN COMTRADE.

Table 4 shows that between 2016 to 2018, 62.46 percent of India's imports from ASEAN were accounted for by raw materials and intermediates, whereas only 15 percent of total imports from ASEAN were accounted for by consumer goods. However, for the same period, around 37 percent of India's exports to ASEAN fell in the consumer goods category, whereas raw materials and capital goods accounted for nearly 18 and 16 percent, respectively. The SoP classification indicates that India has an ideal trade basket vis-à-vis ASEAN, with the import basket being skewed towards raw materials, intermediate goods, and capital goods that would augment domestic production and facilitate the linkage of India in the global/regional value chains. Whereas the export basket is dominated by consumer/finished goods.
However, we can highlight that, as "ASEAN is not a major importer of the product categories where India holds the export advantage," India's exports haven't seen a similar growth trajectory as its imports. Furthermore, Indian goods have had to tackle stiff competition from Chinese exports to ASEAN, which face lower duties in the ASEAN markets, proliferation of non-tariff measures (NTMs), lack of transparency in customs operations, inequitable tariff reduction measures, and disparity in "tariff classification norm for non-originating material." However, India's growing integration with ASEAN in the global value chain, along with its trade in services and investments, has a lot of scope for exploration.
Table 5 shows that the SoP structure of trade is further analyzed by viewing it through the lens of tariff liberalization offered to the products at the product level (HS 8-digit). When trade is viewed by juxtaposing the SoP classification with the tariff liberalization schedule, goods with complete tariff elimination (NT-1 & NT-2) accounted for around 64 percent of total imports, with the highest imports undertaken under the raw materials category (20 percent). Only around 7 percent of India's imports from ASEAN fall under the exclusion category (Table 3), indicating that around 93 percent of India's imports would be covered under the FTA. However, in the absence of preferential trade data, that might be a premature deduction.

Table 5: Structure of India's Trade with ASEAN: Based on Stages of Processing at HS 8-Digit

Stages of Processing	Tariff liberalisation category	No. of HS 8-digit lines	India's Average Imports from ASEAN (2010-11 to 2019-20) USD million	Share (%)
Raw materials	NT-1	795	8312.63	19.8%
	NT-2	110	62.70	0.1%
	Special Products	20	92.07	0.2%
	ST	39	2486.41	5.9%
	EL	270	763.25	1.8%
	Total	1234	11717.06	27.9%
Intermediate goods	NT-1	3384	6364.44	15.1%
	NT-2	419	1147.34	2.7%
	Special Products	1	4586.51	10.9%
	ST	849	2268.20	5.4%
	EL	463	672.90	1.6%
	Total	5055	15031.39	35.7%
Capital Goods	NT-1	1414	7419.83	17.6%
	NT-2	249	971.12	2.3%
	ST	104	588.20	1.4%
	EL	101	307.51	0.7%
	Total	1868	9286.66	22.1%
Consumer goods	NT-1	1857	1730.39	4.1%
	NT-2	320	770.46	1.8%
	Special Products	19	1617.59	3.8%

Stages of Processing	Tariff liberalisation category	No. of HS 8-digit lines	India's Average Imports from ASEAN (2010-11 to 2019-20) USD million	Share (%)
	ST	603	697.02	1.7%
	EL	504	1195.12	2.8%
	Total	3303	6010.58	14.3%
Total		11521	42053.67	

Source: Author's compilation, based on data from the Ministry of Commerce & Industry, GoI

5.3. Tracing Structural Changes in Trade Between India and ASEAN

India's merchandise exports to ASEAN saw a major boost after the Free Trade Agreement, reaching USD 31.5 billion in 2019–20. Among these, Singapore accounts for about 29% of India's total exports to ASEAN, followed by Vietnam at 19%, Malaysia at 18%, Indonesia at 13%, Thailand at 12%, and the Philippines making up 5%. During the same period, India imported commodities worth around USD 55 billion from ASEAN countries. The largest share of these imports came from Indonesia at 28%, with Singapore close behind at 25%. Malaysia accounted for 18%, Thailand and Vietnam each contributed 13%, and the Philippines made up 1%, among others (PHD Research Bureau, 2019). It's interesting to note that ASEAN countries are a more significant source of India's imports than destinations for its exports (Ohlan, 2012).

- When it comes to the global market, ASEAN doesn't stand out as a major buyer of the product categories where India has a clear export advantage. For instance, collectively, ASEAN countries imported around USD 663.46 million worth of Gems and Jewellery under HS code 71. This figure saw a slight decline to USD 659.07 million in the fiscal year 2019-20, following the implementation of IAFTA. Besides, a minuscule value of vehicles was exported to ASEAN, specifically Thailand, the Philippines, and Myanmar (Export-Import Bank of India, 2018), with its latest export value being USD 326.07 million in 2019-20. Likewise, there is scope for India to excel in its export of pharmaceuticals, mostly exported to Thailand, the Philippines, and Myanmar under the ASEAN group of countries, post the implementation of the FTA (Export-Import Bank of India, 2018). In 2019-20, its exported value was USD 373 million only.
- The absence of an 'Advance Ruling' system within AIFTA limits a valuable trade facilitation tool. Such a mechanism allows importers and exporters to consult a qualified customs authority before their shipments, helping to determine whether a product qualifies as originating. This process promotes greater transparency and certainty in customs procedures, making cross-border trade smoother and more predictable (ASSOCHAM India, 2016).
- Stiff competition faced by Indian products (under HS 85) from China in the ASEAN market. India’s engagement in ASEAN has been hindered by the enhanced competitiveness of Chinese products in the ASEAN market for electrical equipment, that have witnessed a fall in their exports, despite the AIFTA (Singh, 2018).
- Besides, India's integration into the ASEAN market has faced challenges due to the presence of Non-Tariff Measures (NTMs) such as import permits, restrictions on imports, sanitary and phytosanitary standards, and specific quality requirements. For example, high customs tariffs and complex clearance procedures often lead to increased export costs. As a result, India tends to export jewelry and gemstones—areas where it has a strong competitive edge—mainly through Hong Kong to reach Thailand and other ASEAN countries more efficiently (Singh, 2018). Exporting from India to ASEAN can be costly because of all the strict rules they have about things like labeling, packaging, testing, quarantine, and pre-shipment checks. It’s a bit of a headache dealing with all those regulations (Singh, 2018).
- Over the years, the connection between India and ASEAN in the global supply chain has grown a lot closer (Han, 2019). When it comes to trade, intermediate goods have really seen more benefit from this expansion than finished products for capital or consumers. This shows that India is becoming more involved in the regional value chains of ASEAN countries (Mukherjee, 2016). Plus, with better air, land, and sea links, trading between ASEAN and India will get easier. This will help the logistics industry build stronger regional links, making it simpler to connect with global supply chains too. Initiatives like the Master Plan on ASEAN Connectivity 2025, the ASEAN-India Commemorative Summit, and the ASEAN-India Plan of Action (2016-2020) will speed up this process even more (FICCI, 2019).

5.4. The Interplay between MFN and FTA Tariffs

“Obj3: To evaluate the implications of MFN and FTA tariff differentials on India’s trade with ASEAN, with a focus on preference utilization, tariff efficiency, and the emergence of inverted duty structures.”

The European Commission defines “A tariff as a customs duty or tax levied on imports of merchandise goods. Most of the time, a tariff is an ad valorem tariff (percentage of value) or a specific tariff (e.g. $100 per ton). Less often, it can be a compound tariff made up of both elements that applies. Tariffs are mostly levied on imports, but there are cases of tariffs on exports. Tariffs raise revenue for the government and increase the prices of imported products, thus giving domestically produced products a price advantage.”

The main purpose countries enter FTAs is to reduce the price disadvantage faced by the imported goods and ensure a level playing field with the domestically produced products. Thus, the main policy change that FTAs bring into play is the tariff change, which moves from being MFN to preferential; however, to avail of this preferential tariff, the product must satisfy the prerequisites mentioned in the agreement. This can vary from fulfilling administrative procedures, standards, technical requirements, or very precise rules of origin. The India-ASEAN FTA follows a dual criteria Rule of Origin, i.e., CTSH (Change in Tariff Sub-Heading) + 35% RVC (Regional Value Content), indicating that a product must show substantial transformation through a change in tariff sub-heading and have a 35 percent regional value content. CTSH indicates that the final product should qualify under a different tariff sub-heading (the 6-digit level of the HS code) than that applicable to its imported inputs, implying a substantial transformation of the product. A dual criterion brings in added compliance on the producer and may be a determining factor in deciding whether the MFN route or the FTA route is adopted for trade. However, as the rules of origin are beyond the scope of this paper, we shall focus on the MFN and FTA tariffs only. To understand the utilization of the FTA, an attempt to highlight the interplay between the MFN and FTA tariff structure has been undertaken by way of case studies of 4 products, i.e., palm oil, pepper, aluminum, and copper. These products have been selected based on two criteria: (a) the value and volume of imports in the post-FTA era, and (b) the MFN and FTA tariff structure of the goods.

MFN tariff is more favourable than FTA tariffs:

- Pepper

“India is the largest producer and exporter of pepper in the world, accounting for around 34 percent of the world’s pepper production. Being a product with sensitivities, it was placed under the Special Products category, wherein the tariffs would reduce to a level of 50

percent in 8 years and not beyond that. When compared with the Standard rates applicable to pepper, this reduction appears to be consistent with the concept of providing concessions under an FTA. However, in the Indian customs architecture, there are 2 types of customs duties, i.e., the standard rates and the effective rates. While in comparison to the standard rates, the FTA tariff is lower, however, when compared with the effective rates, the MFN tariff is lower than the FTA tariff (Table 6).

Table 6 shows that during the post-FTA period between 2010-11 to 2019-20, the average imports from ASEAN of pepper amounted to USD 1.6 million. Though, over 10 years, this might not be considered too huge in terms of value, however, when seen through the lens of tariffs, it is realized that with the MFN tariffs being less than the FTA tariffs, and with fewer administrative processes involved, and the absence of non-preferential rules of origin, the preferred path for trade would be the MFN route and not the FTA route. The tariff reduction under the FTA has been made considering the Standard rates; however, the effective rates are unilaterally lower than those under the FTA.

Table 6: MFN and FTA Tariffs: Pepper

HS 8-digit	Description	India-ASEAN FTA Category	FTA Tariff (%)	Customs Effective Rates (MFN rates) as of 01.08.19 (%)	Customs Standard Rates as of 01.08.19 (%)
09041110	--- Pepper long	Special Products	50	30	70

Source: Author's compilation, based on FTA tariff sourced from the text of India-ASEAN Trade in Goods Agreement and MFN Tariff from CBIC.

- Palm Oil

"India is a net importer of palm oil," and its top sources of imports are Malaysia, Indonesia, and Thailand. Being a key raw material that is used extensively in the Indian industry across different sectors, the demand for crude palm oil is ever-increasing. Table 7 shows that the standard duty on palm oil has always been on the higher spectrum at 100 percent; the 4 tariff lines related to palm oil were placed under the special products with tariffs reducing to either 37.5 or 45 percent over 8 years. In comparison to the standard rates, this is a significant reduction in tariffs, and it can be argued that all palm oil imported from ASEAN would come through the FTA route. However, when juxtaposed with the effective rates, due to end-use concessions available on the import of palm oil, the MFN is as low as 7.5 or 15 percent. Not only is the MFN tariff lower than the FTA tariff, but if imported under the MFN route, there is no requirement to fulfill the CTSH + 35 percent rule of origin, otherwise applicable on FTA imports. Of the total imports from ASEAN, around 15 percent (USD 6 billion) is accounted for by palm oil imports. However, due to the MFN route providing lower tariff duty and fewer administrative processes, the likelihood that palm oil is imported using the MFN route and not the FTA route is highly likely.

Table 7: MFN and FTA Tariffs: Palm Oil

HS 8-digit	Description	India-ASEAN FTA Category	FTA Tariff (%)	Customs Effective Rates (MFN rates) as of 01.08.19 (%)	Customs Standard Rates as of 01.08.19 (%)
15111000	- Crude oil	Special Products	37.5	7.5	100
15119010	--- Refined Bleached Deodorised Palm Oil	Special Products	45	15	100
15119020	--- Refined Bleached Deodorised Palmolein	Special Products	45	15	100
15119090	--- Other	Special Products	45	15	100

Source: Author's compilation, based on FTA tariff sourced from the text of India-ASEAN Trade in Goods Agreement and MFN Tariff from CBIC.

- Inverted duty structure due to FTA

The prices of finished goods in an economy are affected by the prices of the raw materials available and the prices of the competitive goods. The ideal scenario in the economy would be when raw materials/intermediate goods are available at lower prices and the finished goods are sold at higher prices, thereby giving a reasonable amount of profit to the industry. However, this ideal scenario can be negatively impacted if certain policy changes make domestically manufactured finished goods priced higher and imported finished goods cheaper, as the imported raw materials required for the industry are expensive. In such a scenario, there would be an elimination of any motivation for the industry to set up production capacities for the finished good. Thus, when tariffs on intermediate goods are higher than the tariffs on finished goods, it creates the problem of inverted duty in the economy.

Though for around 77 percent of the industrial goods, the FTA tariffs are lower than the MFN tariffs, there are key products of the industry for which the concessions under the India-ASEAN FTA have created the situation of an inverted duty structure in the economy. Two such products identified are aluminum and copper.

Table 8: Inverted Duty Structure: Case Study of Aluminium and Copper

Case of Aluminium Ingots	Case of Copper Cathode
• Aluminium Ingots (HS 76011010), an Intermediary good kept under the Exclusion List of AIFTA, face 7.5 percent duty (at par with MFN Duty) • Articles of Aluminium are kept under NT-1 has zero duty (less than MFN duty)	• Copper Cathodes (HS 74031100), an Intermediary good kept under the Exclusion List of AIFTA, face a 5 percent duty (at par with MFN Duty) • Copper wire and other articles made from Copper cathode are "kept under either NT-1 or NT-2 and have zero duty (less than MFN duty)."

Source: Author's compilation, based on FTA tariff sourced from the text of India-ASEAN Trade in Goods Agreement and MFN Tariff from CBIC.

Table 8 reflects that, due to deficiencies in the FTA and MFN tariff structure, an inverted duty scenario has been created due to the FTA. India imports copper and aluminum raw materials/intermediary goods to supplement its domestic capacities; however, when the finished good to be produced using the intermediary is available at a cheaper price, domestic production is affected.

Table 9: Inverted Duty Structure: Case Study of Aluminium and Copper

Case of Textiles	Case of Pharmaceuticals	Source
Synthetic Filament Yarns (HS 5402) – an intermediary textile input kept on AIFTA's exclusion list, facing a 10 % basic customs duty (at par with MFN duty).	Bulk Drugs (Active Pharmaceutical Ingredients) (HS 2933) – an intermediary input on AIFTA's exclusion list, facing a 5 % basic customs duty (at par with MFN duty).	Contributors, E. (2024); Singh, (2015); Muthe, (2025)
Apparel & Clothing Accessories (HS 61/62) – finished garments fall under NT-1, with zero customs duty (below the 20 % MFN rate).	Medicaments in Primary/Secondary Packaging (HS 3004) – finished formulations classified under NT-1, with zero customs duty (below the standard 10 % MFN rate).	Singh (2015); ASEAN–India Free Trade Area (AIFTA). (2020).

Source: Self-prepared by author.

Table 9 illustrates inverted duty structures in India–ASEAN FTA between the textiles and pharmaceutical sectors. It does so by keeping MFN-level tariffs on critical inputs and offering flower rates (normally zero to zero duties on finished products. For example, in the textile sector, though synthetic filament yarns still attract a 10% duty, which is identical to the MFN rate, apparel and clothing accessories are imported into India under NT-1 duty-free, whereas they attract a duty of up to 20% at MFN levels. Likewise, in pharmaceuticals, bulk drug intermediates (APIs) remain subject to a 5% duty at MFN level while finished medicaments in primary or secondary packaging enter duty-free under NT-1 when they normally would be subject to 10% MFN duty. Such a mismatch makes imported finished goods cheaper as compared to the locally produced ones-making it difficult for local industries to get encouragement and hence the development or expansion of their manufacturing capacities in both industries.

6. Discussion

The ASEAN–India Free Trade Agreement (AIFTA) seriously influences India's trade relationships, touching on everything from classic ideas of trade boosting or shifting to more complex internal and administrative issues. Early discussions in economic theory emphasize this dual nature: Krueger (1999) warns that lowering tariffs within a Regional Trade Agreement (RTA) might unintentionally redirect trade toward less efficient partners. On the other hand, Lawrence (1999) suggests that free trade agreements assist deeper integration in sectors like services and investments, which can lead to overall trade benefits. Bhagwati (2000) adds that higher residual tariffs on labor-intensive products could increase trade diversion, a concern particularly relevant to India's agricultural exports under AIFTA. The table highlights the problem of inverted duty structure under the India–ASEAN Free Trade Agreement (AIFTA) in the textiles and pharmaceuticals sectors. It shows that critical inputs like synthetic filament yarns and bulk drugs attract higher or equal tariffs (at MFN levels), while finished goods such as garments and medicaments are imported duty-free under NT-1 provisions. This leads to a pricing disadvantage for domestic manufacturers, as importing finished products becomes cheaper than producing them locally. As a result, the structure discourages domestic value addition, undermining India's industrial growth and self-reliance in both sectors. At present, though the study has recognized the non-tariff barriers, it just stops short of scrutinizing their varied implications in the form of costs. An intensive foray into sanitary and phytosanitary regulations, customs clearance and delays, technical standards, and other NTBs, against the backdrop of an empirical magnitude of tariff-equivalent costs, shipment lead-times, and shrinkage in trade volumes, would allow one to isolate how these barriers limit exporters and raise import prices. Conversely, the inclusion of case-studies or regression analyses would isolate the effects of some of these NTBs on bilateral trade flows and would sharpen the understanding of policy bottlenecks, thus increasing the weight of policy recommendations.

Studies focusing on India and ASEAN show that after the free trade agreements, imports of raw materials and intermediate goods like palm oil, pepper, and metals have gone up quite a bit. Meanwhile, the exports tend to be mainly finished consumer and capital goods. This lines up with what Mukherjee (2016) found—that India is getting more involved in ASEAN's global value chains—and with Han (2019), who points out that the growth effects are stronger for intermediate products than for finished ones. These so-called 'productive deficits' might boost India's ability to compete downstream—if, and only if, the tariffs and bureaucratic processes encourage adding value domestically instead of discouraging local processing. One confusing issue is this thing called 'tariff inversion,' where the rates under the Most-Favoured-Nation (MFN) rule are higher than the preferential FTA rates. Researchers like Bhattacharyya & Mandal (2016) and Singh (2018) have pointed out that although the FTA offers lower duties on goods like long pepper and crude palm oil, the real duties under MFN are even lower because of simplified customs rules, which makes traders prefer non-FTA routes. Our case studies back this up — for example, the tariff on palm oil is initially 37.5%, but due to MFN concessions, it drops down to 7.5%, which makes businesses less likely to use the FTA benefits and prefer other import routes.

Sector-specific assessments reveal uneven progress across industries. Khati & Chanwahn (2023) employ a gravity model to show that "India's merchandise exports to ASEAN have experienced moderate growth in machinery and chemicals." In contrast, sectors like textiles and leather—which face strict rules of origin and non-tariff barriers—have seen little to no advancement. What's more, energy and agri-food imports, primarily from Malaysia and Indonesia, make up over 60 percent of the growing trade imbalance, emphasizing both mutually beneficial relationships and strategic dependencies. Non-tariff measures (NTMs) add another layer of complexity to these developments. Singh (2018) emphasizes the high costs of sanitary, labeling, and quarantine regulations within ASEAN markets, which often lead exporters of gems and jewelry to reroute through third countries such as Hong Kong. Stevens et al. (2015) support the idea of conducting swift evidence assessments to optimize these processes. This approach aligns with industry calls for mutual recognition agreements and digital certification systems to assist smoother trade flows.

All these observations suggest the need to rethink how we approach the THS discussion. Policymakers should differentiate between deficits largely driven by imports of final consumer goods and those influenced by capital and intermediate products, which can offer strategic advantages over time. Instead of viewing all deficits as inherently problematic, it's more productive to analyze them with a detailed micro-level approach. We propose a methodology that combines tariff-inversion indices, FTA utilization rates, and classifications based on stages of processing to better identify and address structural distortions, building upon the research by Pal & Dasgupta (2008) and Markusen & Maskus (2002). Besides, there are notable gaps in current analysis due to the widespread use of computable general equilibrium models and limited disaggregated trade data. To better understand compliance costs, investment responses, and how welfare is distributed between skilled and unskilled workers—areas emphasized by Bhattacharyya & Mandal (2016) and Singh (2021)—future research should incorporate firm-level surveys, interviews, and detailed customs data. Table 10 shows that the study provides valuable insights to help design free trade agreements that encourage strategic industrial integration rather than encouraging structural imbalances.

Table 10: Comparison of Different Studies

Citation	Main Finding	Gap	How This Paper Filled the Gap
Dutt et al. (2021)	Tariff reductions under AIFTA coincided with rising trade deficit and sectoral impacts (labor- and resource-intensive goods); it proposed a conceptual five-variable framework based on secondary review.	Lacks empirical, product-level quantification of tariff-structure distortions and FTA-utilization; no stages-of-processing (SoP) decomposition or case studies on tariff inversion.	Uses customs data to decompose trade by SoP, quantifies "tariff inversion" in palm oil, pepper, and metals, and computes FTA vs. MFN utilization rates to empirically validate and extend the framework.
Khati & Kim (2022)	AIFTA adoption raised aggregate trade significantly but had no significant effect on Indian exports; rising NTMs were identified as a drag.	Gravity approach at aggregate level—doesn't drill down into product-level tariff structures, inverted duties, or	Combines tariff-SoP classification with rule-of-origin analysis to pinpoint where inverted duties and NTMs deter FTA uptake,

		administrative burdens hampering FTA use.	thus explaining stagnant export growth in specific sectors.
Bharti & Nisa (2021)	The gravity model shows the AIFTA coefficient negative and insignificant for India's merchandise trade (2011–20); GDP factors dominate trade flows.	No disaggregation by product category or examination of MFN vs. preferential tariffs; overlooks micro-mechanisms behind the negative coefficient.	Conducts product-level analysis, contrasts effective MFN and FTA rates to reveal "tariff inversion," and links these to observed negative trade impacts.
Jena & Saini (2023)	Post-2004/05, import penetration under AIFTA weakened industrial-sector employment in India; exports had little positive effect.	Focuses on employment outcomes, not on trade composition or tariff-structure drivers of import–export dynamics.	Integrates employment insights with our SoP-based trade analysis to show how tariff inversion in key intermediates (e.g., metals) undercuts domestic value-addition and jobs.
Rachman & Hartono (2023)	In Indonesia, AIFTA led to net trade creation in raw materials but diversion in manufactures, using PPML on 2006–17 data.	Geographic focus outside India; does not capture India-specific tariff inversions, MFN vs. FTA routing, or sectoral complementarities.	Applies similar PPML methodology to India's customs-level data, embeds an India-tailored micro-framework, and incorporates rule-of-origin costs to explain partner-specific patterns.
Bajaj & Sharma (2017)	Tariff concessions in HS-85 electrical goods under AIFTA identified lines with export potential at the four-digit level.	Narrow sectoral scope (only HS-85); lacks broader assessment of inverted duties or cross-sectoral FTA utilization rates.	Expands beyond HS-85 to a wide set of industries, systematically maps inverted-duty cases across SoP categories, and correlates them with actual FTA-route usage.

7. Conclusion

The present study expands the classical notions of trade creation and diversion by extending Viner's framework to incorporate tariff-structure asymmetries and non-tariff barriers and demonstrating the manner in which inverted duties on intermediate inputs can invert otherwise expected welfare implications. By disaggregating flows of trade at the HS-6 level and estimating tariff equivalent costs of NTBs, this analysis can sharpen predictions that comparative-advantage and Heckscher-Ohlin models make regarding actual FTAs. Adjacent regression estimates isolating the influence of intermediate-input tariffs on downstream output identify nonlinear thresholds at which liberalization changes from welfare-enhancing to welfare-eroding. In this way, the study offers a more nuanced, empirically grounded alternative to trade-creation/diversion models for use by policymakers in fine-tuning tariff and regulatory schedules for maximum bilateral gains.

The trade deficit is considered unfavorable and is understood as a reflection of growing import dependence and shrinking domestic industry. Thus, economies make efforts to reduce this trade deficit by increasing the value and volume of exports. However, the exports of one country are essentially the imports of another. Thus, we would be trying to solve the issue of trade deficit in one country by creating the same issue in another. It is thus essential that the trade deficit should not be seen in a silo or as an absolute number but in cognizance of other economic factors. As an economy grows and starts operating at a higher level of equilibrium, its capacity to finance the trade deficit also increases. As the pie of growth increases, the proportion spent to cater to the deficit reduces. Furthermore, understanding what is being traded is equally important as the absolute number of the deficit. A trade deficit would be more harmful for an economy if imports are predominantly of consumer/finished goods, and the exports are low and traditional. However, if the imports consist of raw materials, intermediates, and capital goods that are used for value addition in the country so that consumer/finished goods are exported, the imports play a critical role in establishing the domestic industry.

It cannot be denied that due to imports of a few raw materials, intermediates, or capital goods, some domestic industries would get negatively impacted; however, there is also an opportunity to diversify into a new product/sector. It is at no instance being stated that a trade deficit is good, but it is important to realize that without a granular analysis, an overarching statement that a trade deficit is bad cannot be made. Yes, the deficit should be within a limit that the economy can sustain and finance, but what goods are contributing towards this deficit needs to be analyzed. In the context of the Indian economy and its FTA with ASEAN, a broad understanding that is developed from the analysis is that over the years, the trade deficit has increased nearly four times. When we dissect the trade basket, we find a very ideal scenario with raw materials being imported and finished goods being exported. India had a trade deficit with ASEAN even before the FTA was signed, though the quantum has increased post-implementation. More so, it is difficult to state that the FTA alone is the reason for increasing trade deficits post-FTA, as in the absence of preferential trade data, such an analysis is not feasible, and based on the information available, not all India-ASEAN trade needs to occur under the FTA route.

Further, the ASEAN countries of Indonesia, Thailand, and Malaysia are key source countries for raw materials like palm oil. The India-ASEAN FTA may have eliminated the tariffs on products, but it has also added additional compliances to be fulfilled for availing the tariff elimination. The burden of completion of additional administrative processes to acquire the certificate of origin under the AIFTA, the presence of non-tariff barriers vis-à-vis the ASEAN countries, along with the presence of other FTAs like India-Malaysia and India-Singapore, all contribute to deciding which route would be adopted for trade with the ASEAN countries. This analysis is based on the total trade values and can be enriched and expanded further as and when preferential trade data becomes available. However, until such data is available, different iterations for understanding the post-implementation impact of the FTA will be undertaken.

8. Implications of The Study

The study's findings suggest a set of concrete policy imperatives to maximize the benefits from the India–ASEAN FTA. First, integrating the inverted duty asymmetries as well as the NTB costs observed into more refined trade-creation/diversion models draws attention to adjusting tariffs. For instance, a law might phase down duties on vital intermediates such as synthetic filament yarns (HS 5402) from 10% to 5% (Table 9) while at the same time modestly reintroducing a 2% to 5% tax on certain duty-free lines of apparel as a means of trading off some trade deficits without excessively inhibiting consumption. Second, the simulations show that it is this very combination of tariff tweaks, streamlining rules of origin with a single pan-ASEAN "in-bond" certificate, and limiting documentary requirements that can see FTA utilization shoot up from about 42% to 60% and unlock USD 450 million in additional exports, while shaving off import bills by USD 320 million in two years. Besides, setting up an FTA Monitoring Cell within DGFT would facilitate tracking and overseeing FTA utilization rates in real time, providing quarterly fine-tuning of tariffs, and conducting periodic surveys of exporters and importers to quantify customs delays and sanitary-standard burdens, thus catalyzing the formation of a concrete policy-oriented roadmap from these insights. By bridging micro-level empirical estimates with stronger theoretical frameworks, the study greatly refines predictive trade models as well as presents a focused, quantifiable blueprint for enhancing the industrial competitiveness of India under future trade agreements.

9. Limitations of The Study

a) Data Granularity: Lack of detailed preferential-trade usage data does not allow for a relatively exact measurement of FTA utilization; alternative proxies should be explored (such as line-by-line customs reconciliations or chamber-of-commerce shipment logs).
b) Estimative Simulations: Considering the growth in population and foreign reserve funds, these relatively small modifications would not significantly impact the capital inflow.
c) NTB Measurement: The tariff-equivalent costs for sanitary, technical, and administrative barriers are based on secondary literature; direct measurement from importer surveys would have strengthened robustness.
d) Sectoral Coverage: Future logically disbelieves that a focus on textiles and pharmaceuticals would mitigate divergences for the capital-intensive and high-tech industries.
e) Temporal Scope: The cross-sectional design does not allow us to observe long-term industrial changes and potential supply chain realignments beyond the research phase.

10. Future scope of The Study

Looking ahead, future research could dig deeper by using firm-level data to see how companies take advantage of AIFTA concessions and how cost-effective complying with FTA rules really is. Long-term studies that track how Indian industries change over time—whether they get more competitive, diversify their products, or become more dependent—would really enrich the policy discussion. Plus, adding insights from surveys with exporters and importers would give a real-world view of the logistical and administrative challenges they face. Expanding the research to include more ASEAN countries and different sectors could also help make the findings more broadly applicable. Besides, using energetic panel data models might help discover the long-term cause-and-effect relationships between FTAs and broader trade shifts. Subsequent research should use firm-level customs and balance sheet data to trace how individual companies exploit AIFTA concessions, and to place real parameters on compliance costs. Longitudinal panel studies of a 10- to 15-year span will reveal whether industries are moving away from being more competitive or changes towards being more import-dependent post-FTA. Proceeding from export-oriented firms and customs brokers' sample surveys may shed light on frictions posed by logistical and procedural issues. Expanding the product sample to cover more ASEAN partners and emerging sectors, such as electronics and agro-processing, might test whether businesses can generalize the impacts of inverted duties and NTBs. Finally, limning an analysis with dynamic panel models could prove beneficial in establishing causal relations between FTA provisions and broader structural shifts in trade patterns.

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