

CRITICAL ASSESSMENT OF DIRECTION AND UNDERLYING COMPETITION IN GLOBAL PEPPER TRADE

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ABSTRACT

This paper aims to trace the direction, suppliers and markets in the pepper trade. Moreover, it analyses intense competition amongst several suppliers exporting to major importers. Specifically, India's advantages and biggest markets for Indian pepper products in the HSN code 0904 have been assessed in order to identify India's current position in the pepper trade. A true indicator of a country's exporting ability and advantage as an exporter for a particular HSN code is Revealed Comparative Advantage, this has been calculated for the top 5 exporters of HSN 0904.

Products within the HSN code 0904 including red chilli and black pepper are amongst India's most exported spices. Thus, it becomes important for us to analyse what India's current position in this trade is and what lies ahead for the country in the same. This leads to questions on market diversity and the stability of Indian pepper trade, which is precisely what this paper attempts to answer. The spice trade is historically and presently imperative for several stakeholders globally; this includes the supplying economies; the importing markets and farmers whose livelihoods depend on the spice trade. In both the Indian and the global context, the impact that pepper trade has on these stakeholders is immense, considering pepper and chilli are amongst the most imported and exported spices in the world.

By identifying the economies that have a stake in the pepper trade, including major markets like the United States of America and identifying who its suppliers are, the paper also explains in detail the interplay between demand and supply along with which suppliers are competing for a share in these markets. Currently, as trade wars erupt and regional tensions rise, it is imperative to analyze the existing dynamics of pepper trade

in order to safeguard the stakeholders involved in it, while protecting a huge asset of the overall Indian trade.

Key Words: International Trade, Revealed Comparative Advantage, Pepper Markets, Trade Competitiveness

1. INTRODUCTION

The world witnessed the first instance of global trade, supply chains and trade routes over 2500 years ago. Historically, trade of one single commodity type supported the rise of producer economies and cultural exchange with the consumers. From Christopher Columbus to Vasco De Gama, discovering shorter trade routes to empires that produced aromatic spices was a market expedition of the ancient world.

Spice trade changed the ancient world, with an increasing demand for it throughout the Roman and medieval periods, spice trade became one of the first truly international market and globalization. In this context, many travelers traversed oceans in search of direct and shorter routes to lead them to spice producers. The Indian subcontinent expanded as an economy due to its prominence as a global spice producer and exporter. Another remarkable feature of this period, is India not facing as much competition from other spice exporters and supplying to all important markets like Ancient Rome.

Historically, the spice trade was also marked by scarcity, in fact, while spice has and continues to be a staple in the Asian diet, in Ancient Rome and medieval Europe, having access to spices was a mark of high status. Gradually however, as strong trade routes were established and producers were colonized, spice became more and more accessible (BBC Future, 2022).

Today, spices are a staple in global diets and the spice industry continues to be a market that is not just commanding global supply chains but one whose demand continues to grow at a staggering rate of 5% annually, expected to reach a value of \$41 billion by 2033 (Majestic Spice, 2025).

‘Spice’ is not a separate botanical category, rather a culinary term used to define a powdered substance cultivated from any plant part including woody shrubs and vines, trees and the roots, flowers, fruits and seeds of various plants (Sherman & Billing, 1999) While spice use has been more common in certain regions like South Asia and the middle east, the demand for various spices like black pepper and turmeric has always come from key markets like Ancient Rome in the past and the USA in the present.

Amongst these however, one commodity stands out as the ‘king of spices’ in historical and modern international trade. From the ancient silk route to modern supply chains, pepper has navigated all routes to reach dinner tables across the globe.

Being one of the most traded commodities in the ancient world, pepper trade has today seen another growing surge in trade in the previous 20 years. Pepper has made its mark in households worldwide, with total pepper exports reaching five times, from \$1.3 billion in 2005 to \$5.06 billion in 2015 and further rising to \$6.08 billion. This growth can also be attributed to a rise in global population from approximately 6.5 billion in 2005 to 8.2 billion in 2024. The trends for increased

pepper export are largely in line with the projected growth of the agricultural and food market as a whole.

International Trade Centre (2018) notes that pepper is a fifth of all imported spices. From 2012-2016 alone, the pepper market grew 9% in value. The market is expected to grow to an estimated USD 18 Billion by 2032 at a Compound Annual Growth Rate (CAGR) of 3.9% (Business Research Insights, n.d.).

The rise in demand for pepper can be attributed to several factors. Firstly, as the culinary industry continues to rise, there is an increased emphasis on strong flavors in various cuisines. Oriental cuisine, for example, the same goes for middle eastern food, Indian food etc. As these foods are becoming more and more popular, the strong flavor that sets them apart is due to their use of pepper amongst other spices, therefore, pepper usage continues to be in the spotlight. Secondly, new trends in markets like Europe and North America have shown that consumers are increasingly focusing on the holistic and medicinal use of pepper. Pepper is known to have anti-inflammatory benefits and can be used to treat joint pain. As healthy living and healthy eating gains more importance for consumers, the producers of pepper look to increase their exports (Henriques, 2022). Thirdly, the consumers rely heavily on spice and pepper imports because their own climatic conditions do not support the production of spices like black pepper and dried chilies. Therefore, it is the producers that export the majority of the domestic supply for the consumers. The pepper industry is a market of extremely high monetary value, and thus, a pepper producer and exporter banks on the increasing demand and importance of supply chains for spices.

Pepper production is dominated by the Asia-Pacific region. Given this region’s sub-tropical climate, it provides perfect conditions for pepper production. Due to a rising global demand and several strong exporters

within and beyond the Asia-Pacific, the pepper trade is highly competitive for this belt of producers including countries like India, Indonesia, Vietnam, and Brazil. Pepper production is not supported by the climates of various consuming markets, especially the types of peppers products which are being demanded including black pepper varieties. This leads to a dependence on producers to supply. Due to the inter-play between an increasing demand and competing suppliers, pepper prices remained high in 2025, making the market very profitable for producers. Despite, a hike in spices consumption, patterns are stable. Moreover, the dynamics within the market provide incentive for producers to sell at lower prices compared to their competitors in order to hold the upper hand in key markets.

India and the spice trade: Historically and presently, one of the most important spices producing countries is India, known as the land of spices in the ancient world. India's subtropical climate is home to several spice-producing states including the Malabar pepper of South India, cumin and turmeric of Gujarat and other spices produced by states like Madhya Pradesh. India's diverse climate across its territory provides for the scope to diversify its crop production to produce a large variety of spices including cumin in the dry climate of Rajasthan and turmeric in high rainfall

regions. Today, India produces 75 of the 109 varieties listed by the International Organization for Standardization (ISO) (India Brand Equity Foundation, 2024).

Domestically, spices like pepper, turmeric and cumin are staples of the Indian diet. Being the largest consumer of spices around the world, the Indian spice market continues to grow in size and value, approximately 85% of all spices produced in the country are consumed domestically. (Tejaswi, 2025)

For India, pepper is an important agricultural export and provides livelihoods to many farmers in its Southern region. The country continues to hold a large share in worldwide pepper exports. Indian pepper is sought after in international markets due to its high quality and strong flavor. India exports pepper in various forms, meeting diverse demands globally. In the context of global pepper trade, India faces fierce competition from Vietnamese and other varieties.

As suppliers continue to stive in the most-sought after markets, this study aims to conduct direction of pepper trade and analyze the complexities of competitiveness in the global pepper trade through Revealed Comparative Advantage (RCA). The paper first delves into a detailed study of the global pepper trade data and identifies the important exporting and importing nations. The following section deals

with Balassa's RCA evaluation for the prime nations identified, for further insights. Lastly, the paper discusses India's status in global pepper trade and conclusions from the research.

2. MAJOR PLAYERS SHAPING THE GLOBAL PEPPER TRADE

This section probes into a thorough understanding of the overall direction of global pepper trade by studying import and export trends. It is based on calculations made using data extracted from ITC Trade Map.

For the purpose of this study, HSN code 0904 for Pepper has been chosen from chapter 9 i.e. coffee, mate and spices. This analysis is being done on a four-digit level due to the collective demand for diverse pepper products in this category. HSN Code 0904 consists of various pepper products and commodities including Pepper of the genus Piper, which contains black pepper, white pepper, and long pepper, whole, crushed, or ground. Also, part of HSN code 0904 is Dried, crushed, or ground fruits of the genus Capsicum: This includes dried chili peppers (such as red chilies), chili powder, and other dried or ground capsicum fruits. The last component is

This refers to and similar products.

Table 1: Top Ten Pepper Exporting Nations (Values in USD Thousands)

Total World Exports	13,49,727		23,23,523			50,67,221			40,44,127			60,87,995		
	2005		2010			2015			2020			2024		
Exporters	Absolute Value	%Share(world exports)	Exporters	Absolute Value	%Share(world exports)	Exporters	Absolute Value	%Share(world exports)	Exporters	Absolute Value	%Share(world exports)	Exporters	Absolute Value	%Share(world exports)
Viet Nam	1,52,217	11.28%	India	4,26,639	18.36%	Viet Nam	12,62,832	24.92%	India	11,67,241	28.86%	India	14,31,862	23.52%
China	1,41,492	10.48%	Viet Nam	4,22,626	18.19%	India	8,76,384	17.30%	Viet Nam	6,53,956	16.17%	Viet Nam	11,31,115	18.58%
India	1,24,279	9.21%	Indonesia	2,52,085	10.85%	Indonesia	5,59,242	11.04%	China	5,72,199	14.15%	China	9,44,992	15.52%
Peru	95,515	7.08%	China	2,15,093	9.26%	Brazil	3,49,875	6.90%	Spain	2,30,921	5.71%	Spain	3,44,548	5.66%
Brazil	79,342	5.88%	Peru	1,18,782	5.11%	China	3,18,379	6.28%	Brazil	1,89,001	4.67%	Indonesia	3,13,383	5.15%
Spain	69,302	5.13%	Brazil	1,14,123	4.91%	Singapore	1,89,255	3.73%	Indonesia	1,69,852	4.20%	Brazil	2,88,408	4.74%
Indonesia	59,210	4.39%	Spain	93,695	4.03%	Germany	1,69,216	3.34%	Germany	1,12,087	2.77%	Mexico	2,16,225	3.55%
Germany	43,048	3.19%	Germany	91,711	3.95%	Spain	1,55,380	3.07%	Peru	95,710	2.37%	Sri Lanka	1,72,851	2.84%
Malaysia	38,574	2.86%	Malaysia	72,413	3.12%	Sri Lanka	1,44,570	2.85%	Mexico	92,459	2.29%	Peru	1,72,674	2.84%
Netherlands	38,429	2.85%	Netherlands	54,985	2.37%	Malaysia	1,37,344	2.71%	United States of America	60,674	1.50%	Germany	1,43,668	2.36%

Source: Author's Calculations Based on ITC Trade Map Data

Table 1 shows the market share and absolute values exported of the world's top 10 largest exporters. Starting from 2005, values are assessed at 5-year gaps. As can be seen in table 1, the pepper market has grown in absolute terms from a world absolute value of USD 1.3 billion in 2005 to USD 6 Billion in 2024. 10 countries come to light as the largest pepper exporters.

Across the period of study, these countries pose as fierce competitors in the pepper export market. This is clearly evident looking at the extremely close market shares. Notably, in 2005, China's market share was a meagre 1% less than Vietnam's, similarly, India's market share was just 2% less than Vietnam's. While this

gap has widened up to 2024, these key players continue to command large portions of the market.

Amongst the top 10 pepper exporters, China has consistently been in the top 5, becoming the third largest exporter of pepper in 2024. Its pepper imports have tripled from \$318.3 million to \$944.9 million in 2024. Vietnamese pepper continues to dominate key export destinations due to its lower export price and higher domestic production of black pepper than India. Black pepper, also called 'black gold' for its increasing value in international markets, gives Vietnam a significant competitive advantage due to its ability to cater to the demands of various importing countries.

Indonesia's exports have grown significantly in absolute terms from 59.2 million USD in 2005 to 313.3 million USD in 2024. It has taken over as the 5th largest exporter in 2024 from Brazil, which was the 5th largest exporter of pepper in 2005.

Brazil and Indonesia's pepper varieties specifically are in high demand globally for their high quality and diverse flavor profiles. Sri Lanka is another major pepper exporter, as a competitor to India, China, Vietnam and Indonesia, it has recently re-emerged as a major exporter within the top 10, holding a 2% share in the market in 2024. Germany and the Netherlands are regional competitors in the European market, both having a similar market share.

While Vietnam was the largest exporter of pepper up to 2005, India took over as the world number one in 2010. The position for biggest pepper exporter has been subject to a competition between both countries with Vietnam again taking over in 2015, India taking it back post that and remaining so. In 2015, India's largest pepper export market was the USA, India exported 21% of its total pepper exported value to the United States. In 2020 however, China became the most important market for India. What is interesting to note here is that while the United States imported the most pepper from India in 2010 (15%), Vietnam has taken over as the largest pepper importer for the USA, with its percentage share in American pepper imports being on a constant rise and reaching a staggering 36% in 2024, up from just 12% in 2005.

Table 2: Top Ten Pepper Importing Nations (Values in USD Thousands)

Total World Imports	11,91,119		22,69,946		46,86,143		38,51,287		58,01,980		
	2005		2010		2015		2020		2024		
Importers	Absolute Value	% Share (World imports)	Importers	Absolute Value	% Share (World imports)	Importers	Absolute Value	% Share (World imports)	Importers	Absolute Value	% Share (World imports)
United States of America	2,72,553	22.88%	United States of America	4,84,338	21.34%	United States of America	10,62,880	22.68%	United States of America	6,47,832	16.82%
Germany	1,00,697	8.45%	Malaysia	1,47,479	6.50%	Germany	3,49,219	7.45%	China	4,52,791	11.76%
Spain	71,956	6.04%	Germany	1,40,062	6.17%	Singapore	2,14,345	4.57%	Thailand	2,11,746	5.50%
Mexico	61,871	5.19%	Japan	98,783	4.35%	Viet Nam	2,08,949	4.46%	Germany	1,82,732	4.74%
Japan	59,484	4.99%	Spain	89,775	3.95%	India	1,96,274	4.19%	Spain	1,48,455	3.85%
Malaysia	52,335	4.39%	Netherlands	82,770	3.65%	Spain	1,74,632	3.73%	Malaysia	1,22,637	3.18%
Netherlands	42,318	3.55%	United Kingdom	74,310	3.27%	United Kingdom	1,67,483	3.57%	United Kingdom	1,11,351	2.89%
United Kingdom	38,798	3.26%	Viet Nam	69,264	3.05%	Japan	1,67,016	3.56%	Bangladesh	1,11,335	2.89%
France	32,681	2.74%	Mexico	62,527	2.75%	United Arab Emirates	1,34,763	2.88%	Japan	1,04,333	2.71%
India	28,622	2.40%	France	61,311	2.70%	Netherlands	1,33,355	2.85%	Mexico	95,145	2.47%

Source: Author's Calculations Based on ITC Trade Map Data

Table 2 shows the market share and absolute values imported by the world's top 10 largest importers of pepper. Starting from 2005, values are assessed at 5-year gaps. Together, these countries represent the largest markets that producers primarily target. With a strong domestic demand for pepper, the United States has consistently ranked as the world's largest importer of pepper. The European market is another important one for producers with the United Kingdom, France, Germany and Spain all being amongst the top 10 importers. While China, Vietnam and India are producers themselves, table 2 shows that they are prominent importers of various pepper products as well.

The United States remains the largest importer of pepper, with a share of 19.87% of world imports in 2024. Thus, it is a highly sought out export destination for producers. It is noteworthy that the most demanded pepper commodity in the United States is black pepper along with white pepper. Suppliers thus compete to have greater exports to the American market. India and Vietnam have continued to have the highest share of exports to the USA in the period of study. Vietnam overtook India as the top exporter to the USA between 2010 and 2015, in fact, between the period 2020- 2024, Vietnam's exports to the USA grew by 20%, reaching 75,924 tons in 2024, compared to a 10% growth for Indian exports to the United States which stood at 43,692 tons in 2024. The most demanded products by the American market specifically are black and white pepper. Not only is Vietnam ahead of India in the exports of both products, Vietnamese black pepper is much cheaper than Indian black pepper (Jeevan & Loksha, 2025; iGrain, 2024). Moreover, India's white pepper exports are small and not as large as Vietnam's. India's share in the American market is driven by its black pepper exports, in lesser quantity than Vietnam's exports, along with its export of dried chilli.

China is another export destination that has emerged in the list of most sought-after markets, even though it's a major exporter itself. In 2020, it is observed that China was the second largest importer of

pepper, a position it has retained in 2024. This ranking is higher than China's ranking as an exporter. This can be attributed to China's high domestic demand and declining production, especially for black pepper. While China is an exporter of dried chilli, both its black pepper and dried chilli production are not enough to meet an ever-growing domestic demand. Culinary and medicinal industries have a sky rocketing demand for pepper. Indian black pepper and dried chilli imports are highly valued in China due to their strong flavor and medicinal properties (6Wresearch, 2025). India is also the largest exporter of dried chillis to China, solving its domestic demand- supply gap.

China's second largest supplier is Indonesia. It is observed that India and Sri Lanka's major competitors Indonesia and Vietnam face a significantly lower tariff rate in the Chinese market at 2.6%, while Indian and Sri Lankan imports face a tariff rate of 14.6%. This is primarily due to the China-ASEAN free trade agreement. Despite this, Indian exports to China accounted for 84% of China's total pepper imports in 2024. Another reason for China's large import of Indian pepper is because compared to Chinese pepper, Indian pepper is cheaper with stronger flavors, therefore, domestic buyers prefer Indian pepper (FreshPlaza, 2025).

Another important importing market is Europe. With 3 European nations ranking amongst the top 10 importers, it is observed that importers like Germany and Spain also rank in the top 10 exporters. This is primarily due to the practice of European countries of importing pepper from large producers like India, Vietnam, Brazil and Indonesia and re-exporting these goods in European markets. For example, Germany's largest supplier is Vietnam while its top destination and fastest growing markets are France and Romania respectively (The Observatory of Economic Complexity, n.d.). Thus, producers face competition when penetrating into the European market primarily because of the presence of these European countries that re-export imported goods. In fact, half of the internal European pepper trade comprises of re-exporting goods that came from producing countries (Centre for the promotion of imports from the developing countries 2023).

All of the stakeholders in these important markets reveal an intense competition amongst suppliers in the pepper market.

2.1 Direction of India's pepper trade

The Indian pepper trade has continued to grow from 2005 to 2024, India's share in total world exports grew from 9% in 2005 to 23% in 2024. Indian varieties are known for their strong flavor profiles and high

quality. As more and more producers continue to compete, India's pepper trade has witnessed dynamic shifts and has taken a new direction in the past decade.

In 2005, 24% of India's total pepper exports were to the USA, this has declined to 12% in 2023. At the same time, when American pepper imports are analysed it is observed that while India and Vietnam competed closely in having the highest share of exports to the USA, in 2015 Vietnam took a considerable lead with 27% of American pepper imports coming from Vietnam as compared to 17% from India. In 2005, this figure for both countries respectively was 12% and 15%. India's share in American pepper imports further declined to 15% in 2024. The reason for India's decreased share in the American pepper market is increased competition from countries like Vietnam and Brazil that offer cheaper black pepper, which is America's most imported pepper product. This price competitiveness leads to American pepper importers favoring Vietnamese black pepper over Indian black pepper.

While India continues to be the USA's second largest pepper supplier, India's most important export destination has shifted from the USA to China. Particularly, the demand for dried red chilli from India has continued to increase. Indian dried red chilli has a more competitive or cheaper

price than its competitors and has a stronger flavour than the domestic Chinese variety. Thus, due to its uses in Chinese cuisine, Indian dried pepper exports to China are the main factor behind India being the main supplier to China.

This reflects another strength of Indian pepper exports. While competitors like Vietnam mainly export certain products within HSN 0904, India's diversified varieties of pepper exports including dried red chillis and black pepper, allows it to meet diverse demands of global markets, giving India an advantage in the global pepper trade.

However, recently, one concern has stood out when Indian pepper trade is analysed. Black pepper, which is one of the most competitive pepper products in the already competitive spice trade, is priced more highly for Indian pepper exports than its competitors. This, as stated above is also the reason for India's decreased share in the American market. There are several factors behind the greater price of Indian black pepper. As compared to its competitors, India's agricultural practices lead to lower agricultural productivity, with plantations being smaller and more fragmented. Moreover, compared to competitors like Vietnam, mechanization in Indian agriculture is low leading to more labor-intensive agriculture and therefore higher

labor cost for one plantation. Additionally, in recent years, it has been observed that due to consistently rising domestic demand for black pepper, India is left with little quantity to export.

Interestingly, the world's largest pepper exporter, India is also the world's third largest pepper importer. With a high domestic demand, especially for black pepper, the international pepper community calculated that after India's exported goods are subtracted from its domestic production, the remaining goods are not enough to meet domestic demand (Kumari, 2020). Indian buyers import Sri Lankan pepper the most. In fact, in order to protect domestic producers, the country imposes tariffs upto 60% on countries like China and Vietnam, but not on Sri Lanka, which makes up 54% of its imported goods

3. REVEALED COMPARATIVE ADVANTAGE AND COMPETITIVENESS ANALYSIS

Revealed Comparative Advantage (RCA) given by Bela Balassa (1965) is a metric used to determine the relative advantage a country has in terms of a commodity that it is exporting. Its formula is $RCA_{ij} = (X_{ij}/X_i)/(W_{ij}/W_i)$, where X_{ij} stands for country i 's exports of commodity j , X_i stands for country i 's total exports in that year, W_{ij} stands for world's exports of commodity j and W_i stands for total world exports. If country i 's RCA is greater than one, this means that this country has a comparative advantage in the export of commodity j . Thus, the greater a country's RCA, greater its competitive advantage and share in terms of exports of a particular commodity that it is supplying. The RCA for the top 5 exporters in 2024 has been calculated using data from ITC Trade data.

Table 3: Revealed Comparative Advantage – Balassa's Method

Country	2005 Values (In USD Thousands)					2024 Values (In USD Thousands)				
	X_{ij}	X_i	W_{ij}	W_i	RCA	X_{ij}	X_i	W_{ij}	W_i	RCA
India	1,24,279	10,03,52,637	13,49,727	10,36,43,77,295	9.50969	14,31,862	44,17,00,612	60,92,082	23,89,99,79,068	12.7176
Vietnam (2023)	1,52,217	3,24,47,129	13,49,727	10,36,43,77,295	36.0234	11,76,004	51,98,19,855	60,92,082	23,89,99,79,068	8.8754
China	1,41,492	76,19,53,410	13,49,727	10,36,43,77,295	1.42594	9,44,992	3,57,54,57,663	60,92,082	23,89,99,79,068	1.03688
Indonesia	59,210	8,56,59,948	13,49,727	10,36,43,77,295	5.3078	3,13,383	26,47,03,354	60,92,082	23,89,99,79,068	4.64459
Spain	69,302	19,27,87,684	13,49,727	10,36,43,77,295	2.76035	3,44,548	40,37,02,939	60,92,082	23,89,99,79,068	3.34826

Source: Author's Calculations Based on ITC Trade Map Data

We observed in the previous section that India has taken over Vietnam as the top exporter as per 2024 data. This observation is further substantiated by the RCA metric as well. While India's RCA in the pepper market grew from 9 to 12, Vietnam's reduced more than 4 times, from 36 to 8. Another possible interpretation of these numbers can be attributed to overall growth in the country's exports (X_i), due to this while the absolute

value of pepper exports from Vietnam has increased, a greater increase in its overall exports suggests that while pepper exports have shown an increasing trend, their share in overall Vietnamese exports has decreased.

As compared to India, Vietnam's pepper industry majorly relies on its black pepper exports, meaning it is not as diversified as India's, who is a major competitor in various pepper products including dried red chilli and black pepper. Thus, when it comes to these different pepper products, India's specialization in many products has given it a much greater advantage than Vietnam when the category HSN 0904 is observed as a whole.

It is interesting to note that despite China's pepper exports growing almost nine-fold, from 141.1 million in 2005 to 944.9 million in 2024, its RCA in the pepper market has fallen by 0.4. The decrease in China's RCA is primarily due to increased competition from other suppliers including Indonesia and Vietnam. As these suppliers continue to have fierce competition amongst each other, China's ranking within the top 10 exporting nations has also fluctuated. Moreover, the RCA also indicates that the share of pepper exports in China's overall massive export value has always been low, this is reflected in China's low RCA value compared to its competitors in both 2005 and 2024. Instead, the Chinese import market for pepper is growing placing China as the second highest pepper importing market in 2024. In fact, as discussed earlier, China's domestic traders themselves are looking to buy imported pepper. This places China as a major exporting destination, while its position as a global supplier is weak.

With the emergence of more competition, Indonesia has also witnessed a reduced market share in key markets like the USA. In fact, as can be seen in Table 4, Indonesia's share in the largest pepper importing market reduced from 22% in 2010 just over 3% in 2024. What is noteworthy is that due to competition from Vietnam, as the Indonesian share in the American pepper import market has decreased, Indonesia's absolute pepper exports have increased from 2010 to 2024. This can be attributed to its market diversification, as it now supplies to Asian countries like Vietnam and China. In fact, Indonesia is the second largest supplier in Chinese pepper imports and the third largest supplier in Vietnamese pepper imports.

Table 4: List of Supplying Markets to United States of America (Product 0904)

Year	2005		2010		2015		2020		2024	
Exporters	Value (USD Thousands)	% of World Imports	Value (USD Thousands)	% of World Imports	Value (USD Thousands)	% of World Imports	Value (USD Thousands)	% of World Imports	Value (USD Thousands)	% of World Imports
Viet Nam	33305	12.22%	61220	12.64%	292658	27.53%	164421	25.38%	416104	36.09%
India	35619	13.07%	75073	15.50%	182997	17.22%	109135	16.85%	181317	15.73%
Mexico	27109	9.95%	40117	8.28%	58455	5.50%	83141	12.83%	155652	13.50%
China	30340	11.13%	53128	10.97%	85334	8.03%	88413	13.65%	112238	9.73%
Spain	9285	3.41%	24420	5.04%	30044	2.83%	50741	7.83%	99150	8.60%
Peru	36134	13.26%	42287	8.73%	53409	5.02%	43323	6.69%	69342	6.01%
Indonesia	33215	12.19%	110645	22.84%	164854	15.51%	20808	3.21%	42784	3.71%
Brazil	26442	9.70%	37509	7.74%	141015	13.27%	34022	5.25%	17773	1.54%
Korea, Republic of	1687	0.62%	3509	0.72%	3080	0.29%	4510	0.70%	6385	0.55%
Türkiye	602	0.22%	150	0.03%	239	0.02%	1989	0.31%	5421	0.47%

Source: Author's Calculations Based on ITC Trade Map Data

Indian and Vietnamese pepper compete for the most sought-after market, the United States of America. The Indian share in the market has experienced fluctuations, but overall, it has not managed to grow to the extent that Vietnam has. While India's share increased by 2% from 2005 to 2024, Vietnamese pepper increased its share by 24% from 2005 to 2024. This is primarily due to Vietnam's cheaper black pepper costs. The American market has an undeniable affinity towards black pepper, which is its most imported pepper product. In 2022, the USA's share in total black pepper imports was 22%. Therefore, American importers prefer the cheaper Vietnamese black pepper which is priced at \$2800 per tonne as compared to \$6000 per tonne for India and \$3200 per tonne for Indonesia (Krishnakumar, 2019).

Vietnam's greater advantage in markets like the USA stems from its more competitive pricing of black pepper over India. In terms of domestic consumption, India's domestic demand for black pepper is so high that they not only have a lesser export quantity than Vietnam, but also import large quantities of black pepper. Vietnam's pricing advantage is primarily due to cheaper labour and a greater output left for export. Moreover, competition from Indonesian and Brazilian varieties have weakened India's position as a black pepper exporter.

4. CONCLUSION

Today, the pepper industry is witnessing a re-emergence in terms of both demand and supply. As the established trends show, it is a historically important internationally traded commodity, and over the years, the pepper industry has grown both in absolute and percentage terms. Several key players closely compete

to establish themselves as suppliers to key importing markets; these include India, Vietnam, Indonesia and Spain, on the basis of greatest advantage and share in the spice market. China is another key exporter, which has recently become a more prominent importing market as well. India and Vietnam have a fierce competition between them for share of supply to top markets, most prominently, the United States of America. While Vietnamese black pepper exports are cheaper, India is able to retain its position as the top exporter of products in the HSN category 0904 due to its diversity of products exported.

For India especially, exports of products within the HSN category 0904 drive the economies of several states like Kerala. Dried red chilli exports and black pepper exports are not only commodities that are widely consumed domestically, but are one of the most exported spices by India. Therefore, in light of regional disputes and trade conflicts, India must look to stabilize this immensely important trade by collaborating with regional partners in the form of trade agreements and open trade. As the Indo-China relationship remains unstable and the USA looks to potentially impose tariffs on imports of Indian pepper, India must look to diversify its export markets to solidify its position in the pepper trade.

Current geopolitical scenarios have made the area of international trade extremely vulnerable which inevitably leads to disruptions in supply chains. For instance, President Donald Trump's recent announcement of a 25% tariff on India has also threatened India's position in the pepper trade (The Economic Times, 2025). Moreover, India's reliance on the Chinese market threatens the stability of its pepper trade. This is due to continuous regional issues that have arisen time and again stemming from India's disturbed relationships with its neighbors. Thus, India must now focus on diversifying its export markets in order to stabilize its pepper trade. As regional cooperation becomes increasingly important, further studies can look into the scope of trade agreements between India and its neighbors in and beyond the pepper trade. Such evaluative studies will be helpful in predicting and studying in-depth potential trade agreements to not only enhance and stabilize Indian pepper trade but create a truly global, diversified path for Indian pepper to reach more and more markets.

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