

Global competitiveness of coffee products: A comparative study of Indonesia and Vietnam

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ABSTRACT

The competition and performance gap between Indonesia and Vietnam coffee underscore the importance of Indonesia assessing its global competitiveness against Vietnam. The study aims to analyze the competitiveness of Indonesian and Vietnamese coffee in international trade, focusing on green beans, roasted coffee, and instant coffee as the primary products of the coffee industry. Assessing export performance necessitates comparative analysis with competitor countries like Vietnam. The data comprises export statistics of both robusta and arabica coffee from Indonesia and Vietnam obtained from the UN Commodity Trade database, covering 2004 to 2021. The Revealed Comparative Advantage (RCA) and Revealed Symmetric Comparative Advantage (RSCA) methods were used to analyze Indonesia's and Vietnam's coffee competitiveness. The study analyzed the Trade Balance Index (TBI) to measure the trade balance of export commodities. The study result stated that Indonesia's competitiveness in green bean coffee is lower than Vietnam's. Vietnam surpasses Indonesia in the instant coffee market after facing reduced competitiveness from Indonesia between 2014 and 2020. Regarding roasted coffee exports, the two countries do not have a comparative advantage in international trade. In comparing TBI results, it is evident that green beans and instant coffee products from Vietnam and Indonesia possess a comparative advantage for export, with an average TBI of 0.97, 0.63, 0.91, and 0.52, respectively. Moreover, although roasted coffee in both countries lacks a comparative advantage, it still focuses on exports. To improve the competitiveness of Indonesian coffee, it is necessary to implement good agricultural practices to ensure consistency and quality, and government policies and regulations are vital to incentivize investment and innovation in upstream coffee processing, thereby fostering a solid industry.

Key words: Coffee; comparative advantage; competitiveness; export performance; market trends; trade.

1 INTRODUCTION

Coffee is a strategic plantation commodity for Indonesia, as this commodity serves as a small-scale farmers' income source, provides industrial raw materials, plays a role in rural development for sustainable agriculture, and contributes significantly to export earnings. Currently, coffee is a significant focus in international trade, particularly regarding its supply side, due to its numerous issues in the commodity chain (Peixoto et al., 2023). Coffee production is threatened by climate change since coffee requires high rainfall and warm temperatures (Franca; Oliveira, 2019). Unfavorable climate conditions, ongoing global warming, and natural disasters have decreased production levels across various countries (Pham et al., 2019). This situation requires attention, considering that almost 100 million people in coffee-producing countries rely on coffee for their livelihoods (ICO, 2019).

Indonesia is ranked fourth as the largest coffee producer in the world after Brazil, Vietnam, and Colombia, with a share of seven percent of total world production. According to the Directorate General of Plantation, Indonesian coffee production is hindered by low productivity resulting from aging plants, the use of random seeds, and suboptimal implementation of Good Agricultural Practices (GAP) and Good Manufacturing Practices (GMP) (Ministry of Agriculture, 2020). The five provinces that are the largest

coffee producers in Indonesia are South Sumatra, Lampung, North Sumatra, Aceh, and Bengkulu.

In Asia, coffee has an essential contribution to the economies of Indonesia and Vietnam because it is a significant export commodity that contributes to both countries' foreign exchange earnings. (International Coffee Organization - ICO, 2023) shows that these two countries contribute 24.5 percent of world production. Apart from that, Vietnam and Indonesia are the world's largest robusta coffee-producing countries, contributing 50 percent of the world's total robusta coffee production. Indonesian coffee productivity averages around 585 kg/ha, which is much lower than China's productivity of 3,005 kg/ha and lower than other ASEAN countries such as Malaysia (2,940 kg/ha) and Vietnam (2,615 kg/ha) (Indonesian Center for Agricultural Data and Information System - ICADIS, 2022). However, Vietnam's production in 2023 decreased by 9.8 percent compared to the previous year due to prolonged rainfall in three coffee production center provinces, lack of fertilizer, and farmers' shift to other more profitable crops such as pepper or durian (ICO, 2023). In contrast to Vietnam, Indonesia's 2023 production increased by 2.4 percent compared to the previous year despite the La Niña phenomenon. Usually, La Niña causes a decline in productivity because increased rainfall disrupts the critical dry period needed for flower formation when coffee plants require less water. Sarvina et al. (2021) found that La Niña declined

Indonesian coffee production, ranging from 6 – 22 percent in the five main production centers. However, coffee production in Indonesia continues to increase due to the expansion of coffee cultivation areas since 2018, encompassing 71 thousand hectares (ICO, 2023).

Coffee consumption globally reaches around 400 billion cups annually, making it a highly valued beverage and a significant global trade commodity. Export competitiveness is vital in every country's competition in the global market because it is defined as the ability of a product to enter foreign markets successfully. The strength of a nation's competitiveness is determined, among other things, by its capability to employ its superior resources to reinforce its position in world competition. Porter's theory of competitiveness identifies four key factors that influence the competitiveness of companies and industries in a country, namely the availability of production factors, both basic and advanced, demand and quality requirements from end consumers, supporting industries in the supply chain, as well as strategy, market structure and business rivalry in the industry (Porter, 1990).

For both countries, coffee has become one of the main pillars of Vietnam and Indonesia's exports, with a strategic role as a non-oil and gas commodity source of foreign exchange. Moreover, Vietnam and Indonesia have similar coffee cultivation characteristics. Both Vietnam and Indonesia are known for producing robusta, a lower-value type of coffee. Coffee from these two countries dominates the market segment, providing large quantities of cheap raw materials as a blend in the instant coffee industry. Approximately 90 percent of coffee beans grown in Vietnam are robusta, with only 10 percent being arabica (Thăng, 2022). Likewise, Indonesia produces 73% of robusta coffee beans; the remaining percentage is arabica (Ministry of Agriculture, 2022; Suryana *et al.*, 2023b). It is due to most coffee production centers are at an altitude of 500 – 700 meters above sea level in Vietnam and 100 – 600 meters above sea level in Indonesia (Djufry; Wulandari; Villano, 2022; Havemann *et al.*, 2015), where this altitude is ideal for the production of robusta coffee in terms of climate and soil conditions. Furthermore, almost all coffee production in Vietnam (95%) and Indonesia (98%) comes from small-scale farmers, the rest from state plantations or private plantations (Havemann *et al.*, 2015; Ministry of Agriculture, 2022). Due to most land holdings being less than two hectares, Vietnamese and Indonesian farmers have limited bargaining power in the supply chain.

The global coffee trade is categorized into three primary types: green beans, roasted coffee, and instant coffee. Vietnam and Indonesia's processed coffee products have been exported to many other Asian countries and continents, including America, Europe, Africa, and Oceania. In 2022, the United States and Germany are the top export markets for essential processed coffee commodities, including green

beans and roasted coffee. The primary export destinations for further processed coffee, with the most significant trade value, are Asian countries, particularly the Philippines (UN Comtrade, 2024). So, it is not surprising that the Global North is a popular destination for green beans export due to high per capita consumption and advanced coffee processing industries; on the other hand, Asian countries are emerging markets for instant coffee because of population growth and high coffee consumption potential (Suryana *et al.*, 2023a). According to ICO (2023), coffee consumption in 2022/2023 will experience an anomalous decline due to the effect of the COVID-19 pandemic, high worldwide inflation rates, and a decline in global stocks, which has resulted in a reduced need for purchases on the international market. However, the projection for world coffee consumption for 2023/2024 will grow by 2.2 percent, assuming the global economy will continue to grow above three percent.

Indonesia has the chance to boost coffee exports due to the rising global demand, perhaps leading to a gain in national economic output. Nevertheless, Vietnam's status as an ASEAN coffee producer is perceived as a potential obstacle to expanding Indonesian coffee exports. According to Ningsih and Kurniawan (2016), the emergence of more competitive competitor countries led to a decline in Indonesia's agricultural product export performance in ASEAN. Thus, it is essential to understand Indonesian position of global competitiveness in coffee trading compared to Vietnam to formulate a strategy for enhancing the export performance. There are several studies about the comparative advantages of Indonesian coffee (Kurniawan; Razzaq; Jumintono, 2020; Rosiana *et al.*, 2017; Widyantini, 2019; Winarno, 2018). However, the study comparing the global competitiveness of Indonesia and Vietnam coffee has not been widely discussed. Pratita and Budiarto (2021) compare the advantages and export performance of Indonesia and Vietnam coffee only for the US market and not for specific products.

In light of this, the study examines Indonesia's and Vietnam's competitive position in the global coffee trade, including green beans, roasted coffee, and instant coffee. In the following part, we introduce the materials and methods, detailing the specific formulas employed in this study. Chapters 3 and 4 thoroughly analyse and discuss the results, while Chapter 5 provides concluding remarks.

2 MATERIAL AND METHODS

2.1 Material

Vietnam was selected for comparison because its coffee industry is similar to Indonesia's in terms of economic significance, types of coffee, cultivation characteristics, and export markets. These similarities highlight the parallel

nature of the coffee industries in Vietnam and Indonesia, from cultivation practices to their roles in the global coffee trade.

The coffee being studied does not distinguish between robusta and arabica, as the available international trade data does not differentiate between these coffee types. The study used secondary data from the website of the UN Comtrade Database (<https://comtradeplus.un.org/>), ICO (<https://icocoffee.org/>), and Trademap (<https://www.trademap.org/Index.aspx>). The dataset comprises export statistics for green beans (HS Code 0901.11), roasted coffee (HS Code 0901.21), and instant coffee (HS Code 2101.11) originating from Indonesia and Vietnam, spanning the years 2004 to 2021. According to the United Nations Statistics Division, HS Code 0901.11 is for coffee that is not roasted or decaffeinated. HS Code 0901.21 is for roasted coffee that is not decaffeinated. HS Code 2101.11 is for extracts, essences, and concentrates of coffee, and preparations with a basis of these extracts, essences, or concentrates, or with a basis of coffee.

2.2 Methods

The study employed the Revealed Comparative Advantage (RCA) approach, devised by Balassa in 1965, to analyze the competitiveness of a country's export products. The fundamental idea of this approach is that a country's comparative advantage is shown by trade between countries so that its comparative advantage is reflected in its exports. Balassa (1965) defines RCA as a concept that evaluates relative export shares. The RCA method assesses a country's export performance for a particular commodity by comparing the proportion of that commodity's overall exports to its share in global trade. The RCA formula is described in Equation 1.

$$RCA_{ij} = (X_{ij}/X_{it}) / (W_j/W_t) \quad (1)$$

Where X_{ij} represents the export value of country i for commodity j , X_{it} denotes the total export value of country i , W_j stands for the world export value of commodity j , and W_t indicates the total value of world exports. The RCA_{ij} index is between zero and infinity ($0 \leq RCA_{ij} \leq \infty$). When the RCA index is above 1, the share of product j in the country i 's total exports is greater than the average share of that product in world exports, meaning that country i has a comparative advantage and has strong competitiveness. If the RCA index is below 1, then the share of commodity j in the country i 's total exports is lower than the average share of that commodity in world exports, meaning country i has no comparative advantage and weak competitiveness. However, the RCA_{ij} index cannot be compared on both sides of index 1, so (Dalum; Laursen; Villumsen, 1998) and Laursen

(1998) make the index symmetric by transforming RCA into revealed symmetric comparative advantage (RSCA) which is explained in Equation 2.

$$RSCA_{ij} = (RCA_{ij} - 1) / (RCA_{ij} + 1) \quad (2)$$

Where $RSCA_{ij}$ is the symmetric value of the RCA_{ij} index. The RSCA index has a value of -1 to 1 ($-1 \leq RSCA_{ij} \leq 1$). When the RSCA index of country i is above zero, the country has a comparative advantage over commodity j . If the RSCA index of country i is below zero, it means that the country does not have a comparative advantage for commodity j . The RSCA can be combined with TBI indexes to create product mapping (Widodo, 2009). Product mapping can be used to analyze a product's comparative advantages and export/import specialization.

An analysis of the Trade Balance Index (TBI) introduced by Lafay (1992) was carried out to measure the trade balance of export commodities. This index analyzes a country's trade specialization as a net exporter or net importer. The TBI formula is described in Equation 3.

$$TBI_{ij} = (X_{ij} - M_{ij}) / (X_{ij} + M_{ij}) \quad (3)$$

Where TBI_{ij} is the trade balance index of country i for commodity j , X_{ij} is the value of the country i 's exports for commodity j , and M_{ij} is the value of the country i 's imports for commodity j . The TBI index has a value of -1 to 1. When the TBI index approaches -1, the country is a net importer or specializes in imports, while when the TBI approaches 1, the country is a net exporter or specializes in exports. Then, when the TBI value is between -1 and 1, this is an indication that the country is exporting and importing these commodities at the same level (equally).

As mentioned before, the RSCA and TBI index can be used to create product mapping. This mapping was carried out to categorize products based on their comparative advantage and export specialization. This mapping can be divided into four categories: A, B, C, and D (Figure 1). Category A describes commodities with a comparative advantage and specialization in exports. These commodities are strengths for the country both in terms of production and trade. Category B consists of commodities with comparative advantages but no export specialization. These commodities are strengths in production but not in trade. Category C describes commodities with specialization in exports but no comparative advantage. These commodities are strengths in trade but not in production. Category D consists of commodities that have neither comparative advantage nor export specialization. These commodities are weaknesses for the country in both production and trade.

<i>Revealed Symmetric Comparative Advantage (RSCA)</i>	RSCA > 0	Category B (RSCA > 0 and TBI < 0) Comparative advantage Net-importer	Category A (RSCA > 0 and TBI > 0) Comparative advantage Net-exporter
		Category D (RSCA < 0 and TBI < 0) Comparative disadvantage Net-importer	Category C (RSCA < 0 and TBI > 0) Comparative disadvantage Net-exporter
	RSCA < 0		
		TBI < 0	TBI > 0
<i>Trade Balance Index (TBI)</i>			

Figure 1: RSCA-TBI Products Mapping.

3 RESULTS

3.1 The Revealed Comparative Advantage of Green Beans, Roasted, and Instant Coffee

Vietnam and Indonesia are among the world's four largest producing and exporting countries for green beans. The analysis shows that Vietnam generally has a stronger comparative advantage in coffee exports than Indonesia. Vietnam's RCA values for green beans, roasted coffee, and instant coffee are higher, reflecting its competitive edge in the global market. According to (United States Department of Agriculture - USDA, 2023) these two countries account for 30.15 percent of the world's total green bean production in 2022/2023, with Vietnam contributing around 16.53 percent and Indonesia around 13.62 percent. In the same year, around 29.66 percent of total exports of green beans came from these two countries, where Vietnam contributed 22.76 percent while Indonesia contributed 6.90 percent.

RCA values above one in both countries during 2004 – 2021 indicate both countries' competitive capability in global trade. A graph of the movement of Vietnam and Indonesia's green beans' RCA values can be seen in Figure 2. The RCA index of roasted coffee products between the two countries tends to fluctuate from 2004 to 2021 (Figure 3). Indonesia surpassed Vietnam in RCA value for roasted coffee from 2004 until 2005, with Vietnam outperforming Indonesia for the remainder of the period until 2021, except in 2010 and 2015.

The RCA value of instant coffee between the two countries tends to increase from 2004 to 2021 (Figure 4). Indonesia briefly surpassed Vietnam's RCA value of instant coffee between 2014 – 2018 and 2020 but then experienced a significant decline. Both Indonesia and Vietnam can compete in the international trade of instant coffee, with

Vietnam demonstrating higher competitiveness than Indonesia.

3.2 The Analysis of Coffee Product Competitiveness

To assess the competitiveness of the coffee products from both countries, product mapping was conducted. This approach employs two key indices, RSCA and TBI, to ascertain the comparative advantage of the product and illustrate its position on a graph segmented into four distinct categories.

The results of RSCA presented in Table 1 reveal differing comparative advantages between coffee derivative products for Vietnam and Indonesia. Vietnam, holding the position as the world's second-largest exporter of green beans, exhibits a higher average RSCA than Indonesia. Both countries show a lack of comparative advantage regarding roasted coffee, as indicated by negative values. Conversely, Vietnam demonstrates a superior comparative advantage for instant coffee over Indonesia, albeit with a relatively narrow gap between the two countries. Nevertheless, Vietnam consistently maintains a higher RSCA value across all three coffee types, highlighting the imperative for Indonesia to enhance production and competitiveness across its entire spectrum of coffee products.

Based on TBI computations, it becomes evident that Vietnam and Indonesia engage in simultaneous export and import activities concerning green beans, with both countries functioning as net exporters given their TBI values approaching 1 (Table 2). Regarding roasted coffee and instant coffee, the TBI values also indicate that both nations participate in the international trade of these commodities. Notably, Vietnam exhibits a substantially higher TBI value for roasted coffee than Indonesia, indicating a more evolved downstream industry in Vietnam, with roasted coffee emerging as a prominent export commodity.



Figure 2: Revealed Comparative Advantage Value of Green Beans Coffee.

Source: Author's analysis.

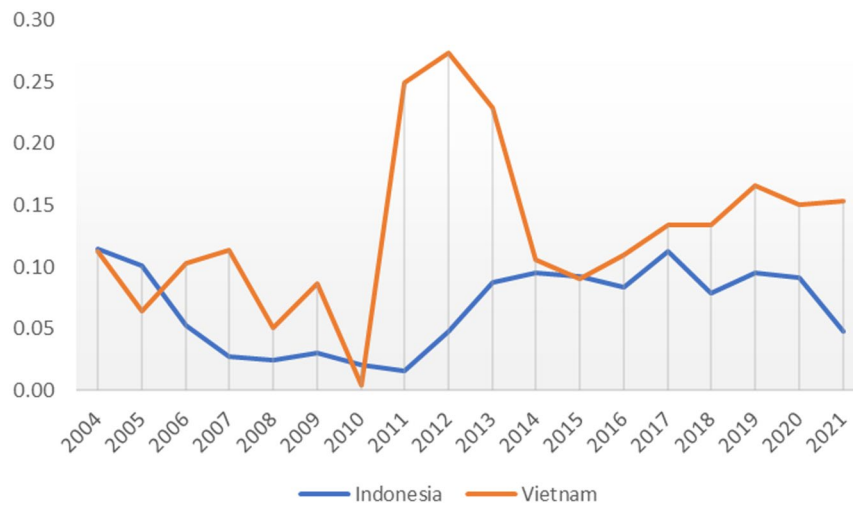


Figure 3: Revealed Comparative Advantage Value of Roasted Coffee.

Source: Author's analysis.

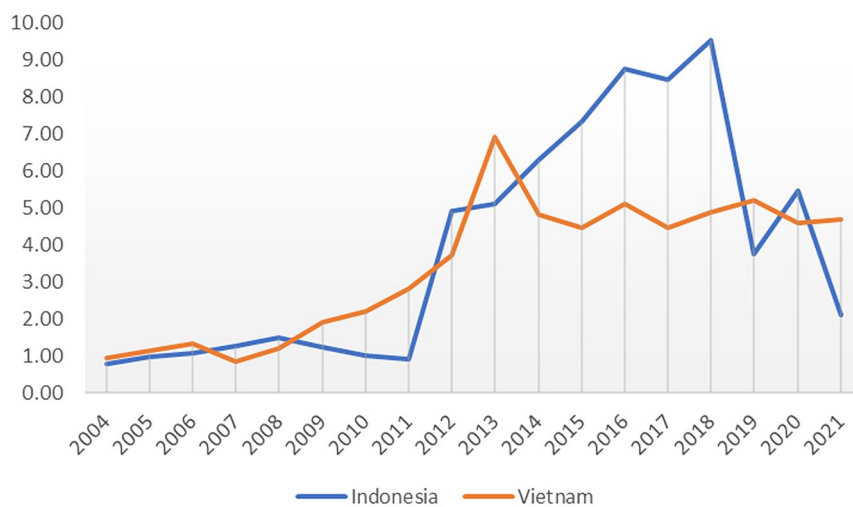


Figure 4: Revealed comparative advantage value of instant coffee.

Source: Author's analysis.

Table1: Revealed Symmetric Comparative Advantage of Indonesian and Vietnamese coffee.

Year	Green beans		Roasted coffee		Instant coffee	
	Indonesia	Vietnam	Indonesia	Vietnam	Indonesia	Vietnam
2004	0.68	0.94	-0.79	-0.80	-0.13	-0.03
2005	0.74	0.92	-0.82	-0.88	-0.02	0.06
2006	0.74	0.94	-0.90	-0.81	0.03	0.14
2007	0.72	0.95	-0.95	-0.80	0.12	-0.08
2008	0.77	0.95	-0.95	-0.90	0.19	0.10
2009	0.73	0.93	-0.94	-0.84	0.10	0.31
2010	0.65	0.92	-0.96	-0.55	0.00	0.38
2011	0.57	0.90	-0.97	-0.60	-0.04	0.48
2012	0.69	0.92	-0.91	-0.57	0.66	0.58
2013	0.76	0.91	-0.84	-0.63	0.67	0.75
2014	0.69	0.91	-0.83	-0.81	0.73	0.66
2015	0.75	0.85	-0.83	-0.83	0.76	0.63
2016	0.71	0.87	-0.85	-0.80	0.79	0.67
2017	0.72	0.85	-0.80	-0.76	0.79	0.63
2018	0.66	0.85	-0.85	-0.76	0.81	0.66
2019	0.70	0.79	-0.83	-0.71	0.58	0.68
2020	0.66	0.74	-0.83	-0.74	0.69	0.64
2021	0.59	0.74	-0.91	-0.73	0.35	0.65
Average	0.70	0.88	-0.88	-0.75	0.39	0.44

Source: Author's computation.

Table 2: Trade Balance Index of Indonesian and Vietnamese coffee.

Year	Green beans		Roasted coffee		Instant coffee	
	Indonesia	Vietnam	Indonesia	Vietnam	Indonesia	Vietnam
2004	0.97	0.99	0.27	0.86	0.77	0.70
2005	0.99	1.00	0.36	0.96	0.69	0.59
2006	0.97	1.00	0.09	0.99	0.69	0.55
2007	0.79	0.99	-0.36	0.93	0.54	0.25
2008	0.97	0.99	-0.33	0.69	0.27	0.06
2009	0.95	0.98	-0.22	0.70	0.35	0.13
2010	0.92	0.99	-0.35	0.92	0.33	0.41
2011	0.92	0.98	-0.43	0.88	-0.15	0.52
2012	0.83	0.98	0.08	0.89	0.63	0.53
2013	0.94	0.96	0.25	0.88	0.53	0.88
2014	0.92	0.96	0.22	0.66	0.68	0.85
2015	0.95	0.97	0.33	0.68	0.68	0.79
2016	0.92	0.97	0.27	0.68	0.79	0.84
2017	0.95	0.94	0.30	0.73	0.75	0.84
2018	0.69	0.94	-0.03	0.76	0.61	0.82
2019	0.88	0.94	-0.04	0.82	0.27	0.87
2020	0.93	0.92	0.18	0.87	0.63	0.91
2021	0.94	0.93	-0.05	0.86	0.37	0.88
Average	0.91	0.97	0.03	0.82	0.52	0.63

Source: Author's computation.

4 DISCUSSION

4.1 Competitiveness of Indonesian and Vietnamese Green Beans Coffee

Indonesia's green beans competitiveness is inferior to Vietnam's. Several variables may contribute to this. Regarding green bean productivity, Vietnam is ahead of Indonesia. Due to technical issues, Vietnam's cultivation system is more advanced than Indonesia's traditional methods. Indonesia uses more intensive labor in production than Vietnam (Widyantini, 2019). Vietnam has implemented Good Agricultural Practices, where the selection process has started with improved seeds, good irrigation, balanced fertilization and quality standards that have been implemented. This cultivation technology raised Vietnam to a productivity level of 2,615 kg per hectare, while Indonesia only had 585 kg per hectare (ICADIS, 2022),

Furthermore, the input and output structure and the government policy support give different factors for both countries in handling coffee productivity (Yunita, 2021). In the 1980s, policies such as local reforms, state-sponsored migration, provision of production land, and irrigation investment boosted coffee production in Vietnam during the 1990s and 2000s (Byrareddy et al., 2019). The Indonesian Ministry of Agriculture (2020) mentioned weak institutional positions, limited business partnerships, intense competition among producer countries, and susceptibility of Indonesian prices to global market changes. To boost its international trading, Indonesia has issued several policies related to coffee trade from Indonesia, such as tax regulations, export provisions, national quality standards, certification processes, and branding.

Indonesian green beans are categorized as Grade 4, whereas Vietnam and Ivory Coast green beans are designated as Grade 2 in the same indicator group (ICO, 2020). Indonesian coffee's poor quality is attributed to the prevalence of smallholder plantation growers who continue to employ traditional growing techniques (Amanda; Rosiana, 2023). Rahardjo et al. (2020) added that Indonesia's lack of competitiveness in the coffee industry is due to its inability to effectively manage coffee supplies for export and uphold quality standards. Thus, Indonesia is less competitive in terms of production and post-production. In other words, overall, Vietnamese coffee is more competitive than Indonesia.

This finding aligns with the research findings, which assert that Indonesia's comparative advantage is inferior to that of the other three leading exporters (Baso; Anindita, 2018; Jamil, 2019; Rahardjo et al., 2020; Syahputri; Hasnah; Khairati, 2023). This disparity can be attributed, among other factors, to the role of government in promoting coffee export growth in each exporting country. It involves various aspects such as the development of coffee plantation infrastructure,

improvement of transportation facilities in production centers, easy access to credit, research related to coffee, and policies associated with processing. As mentioned earlier, the Vietnam government employed several policy instruments that collectively encouraged the expansion of coffee plantations, leading to a surge in coffee production. Furthermore, Indonesian coffee competes with Vietnamese coffee as a substitute commodity in the German market for robusta coffee (Manalu et al., 2020). Besides the German market, Indonesian coffee also needs to increase its competitiveness in the ASEAN market, considering that Vietnam has a higher coffee export value in this region (Zuhdi; Suharno, 2015). Based on Copetti and Coronel (2019) findings, despite increases in production in both countries, Indonesia's market share decreased by 0.5 percent, while Vietnam's increased by five percent over the past 1.5 decades.

However, Vietnam's RSCA has continuously declined since 2016 (Table 1). This decline could be attributed to the absence of technological advancements in coffee products' cultivation and processing phases within the country, mainly due to the predominance of small-scale producers/farmers, as mentioned by Nguyen; Nguyen; Bosch, 2017. To enhance coffee products' competitiveness, higher and integrated technology is essential, and Indonesia should take advantage of this.

4.2 Competitiveness of Indonesian and Vietnamese Roasted Coffee

Expanding processed coffee product varieties, including roasted coffee, instant coffee, decaffeinated coffee, and soluble coffee, presents an opportunity for development into a higher-value commodity that can compete effectively in the global market (Rahardjo et al., 2020). However, processed coffee exports play only a minor role in developing Indonesian coffee exports (Fadli et al., 2022; Sahat; Nuryartono; Hutagaol, 2016). Carvalho, Paiva, and Vieira (2015) elaborate in their writing that the coffee industry is evolving, leading coffee from a simple product to one with high specifications. The world's largest exporters of roasted coffee are Switzerland, Italy, and Germany. Although these countries are not the most significant coffee producers globally, they have the capacity to process coffee beans imported from around the world into various processed products, predominantly roasted coffee, which are then exported worldwide. Switzerland's success can be attributed to product innovations such as capsules and coffee machines, effective marketing channels, advertising strategies, and business models (Pascucci, 2018). Both Indonesia and Vietnam can draw lessons from Switzerland, the world's leading exporter of roasted coffee, with a market share of export value of 23.15 percent.

According to data from UN Comtrade (2024), Indonesia and Vietnam represent a minority share of the world's

roasted coffee exporters. The highest value of Indonesian roasted coffee exports over the last decade was recorded in 2017, totalling 11.24 million USD, which still falls short of Vietnam's export value of 16.99 million USD for the same period. Vietnam achieved its highest export value of roasted coffee in 2022, reaching 31.73 million USD. Regarding average growth in roasted coffee exports from 2013 to 2022, Indonesia and Vietnam experienced increases of 2.46 percent and 9.31 percent, respectively.

4.3 Competitiveness of Indonesian and Vietnamese Instant Coffee

Based on UN Comtrade (2024), Vietnam ranked as the fourth largest exporter of instant coffee globally in 2022, with Indonesia in ninth place. In the same year, Vietnam held a 7.13 percent market share, while Indonesia's share stood at 3.55 percent. Indonesia saw a slight increase of 1.34 percent in its coffee market share compared to the previous year, whereas Vietnam experienced a marginal decrease of 0.03 percent. Despite this, both countries observed growth in export value, with Indonesia's increasing by 82.25 percent and Vietnam's by 13.13 percent. Notably, Indonesia's highest export value for instant coffee over the past decade was in 2018, reaching 509.84 million USD, surpassing Vietnam's 353.77 million USD. However, from 2019 to 2022, Vietnam maintained an upward trajectory in instant coffee export value, with an average growth rate of 4.81 percent, while Indonesia experienced a notable decline in growth, amounting to 19.67 percent.

In 2022, Vietnam's export market share for instant coffee was projected to remain larger than Indonesia's, reaching 0.23 percent and 0.07 percent, respectively. Given that the primary raw material for instant coffee (coffee extract) in Indonesia is robusta coffee, the availability of raw materials for processing this instant coffee is relatively assured (Sahat; Nuryartono; Hutagaol, 2016). The primary destination country for instant coffee exports from Indonesia and Vietnam in 2022 is the Philippines, with export contributions reaching 47.55 percent and 15.84 percent (UN Comtrade, 2024).

4.4 Mapping of Indonesian and Vietnamese Coffee Products

According to data from the ICO (2023), the global coffee industry continues to confront several challenges, including the post-COVID-19 pandemic, global inflation affecting economic conditions worldwide, escalating living costs leading to diminished consumer purchasing power, and a significant reduction in stock levels, resulting in adverse effects on global coffee consumption trends. Nevertheless, it is anticipated that assuming the global

economy maintains a growth rate exceeding 3.0 percent, the outlook for world coffee consumption is projected to increase by 2.2 percent, driven by contributions from non-coffee-producing countries that are expected to rise by 2.1 percent. Within this context, market opportunities for coffee products from Indonesia and Vietnam remain open in the Asian and Oceania markets.

Furthermore, the RSCA and TBI analysis results from Chapter 3 are utilized for product mapping, as illustrated in Figure 5. This visual representation categorizes Vietnam and Indonesia's green bean and instant coffee products into category A, indicating a comparative advantage and export orientation for these products during 2004-2021. Both countries have strength in green beans and instant coffee in terms of production and trade.

Meanwhile, Indonesian and Vietnamese roasted coffee is positioned in category C due to its lack of comparative advantage but specialization in exports. This means that both countries are strong in the roasted coffee trade but not in production.

Several measures can be taken to sustain and potentially elevate Indonesia's competitiveness in coffee product mapping. First, Indonesia's coffee agribusiness development, particularly in coffee farming, deserves special attention. This aspect has a considerable impact on the quality of coffee and, as a result, affects the marketability of Indonesian coffee globally (Amanda; Rosiana, 2023). Additionally, to enhance coffee products' production, quality, and competitiveness, farmers should adhere to good agricultural practices to obtain certified coffee products. The certification of coffee products can provide a competitive advantage by enhancing the product's value proposition, according to Sudirman, Nurmalina, and Suprehatin (2021).

Furthermore, the government should implement policies and regulations supporting downstream coffee product development growth. Approximately 80 percent of Indonesian coffee is green beans, with a small portion being processed into roasted or ground coffee and instant coffee. Given this upstream-focused orientation, Indonesia must shift from prioritizing volume to emphasizing value creation. Indonesia can enhance its competitiveness within the global coffee market by accentuating value addition.

A study conducted by Fortunika, Harianto, and Suharno (2021) emphasized the necessity for enhanced protection for roasted coffee compared to green coffee beans, particularly in terms of tariffs. This recommendation is based on considerations of demand elasticity, where Indonesian roasted coffee exhibited inelastic demand in Japan, whereas green coffee beans demonstrated elastic demand. Moreover, while Indonesian green coffee beans were perceived as a luxury in Germany, roasted coffee was regarded as an inferior product in that market.

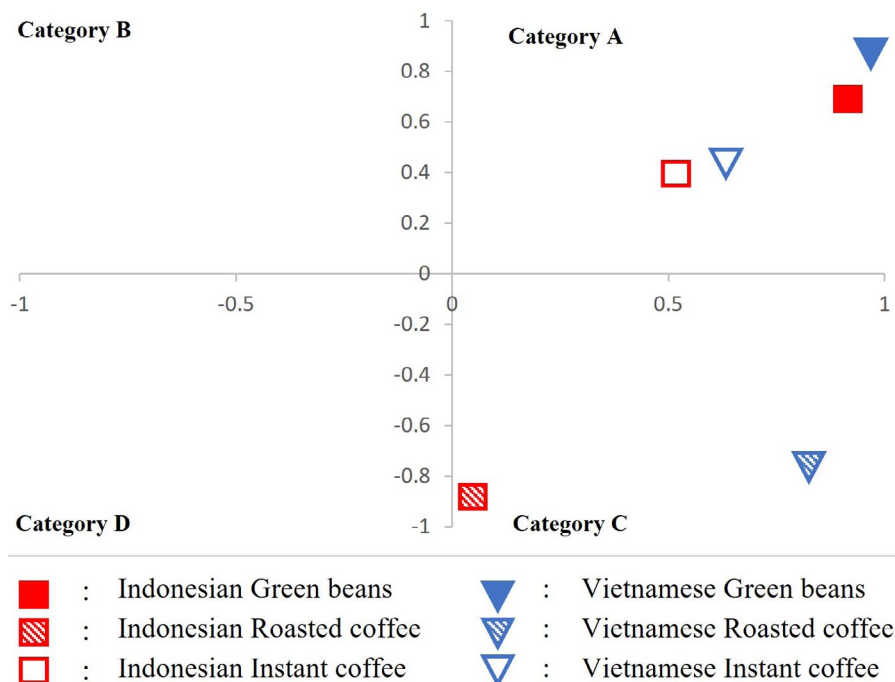


Figure 5: RSCA-TBI mapping for Indonesia and Vietnam coffee during 2004-2021.

Source: Author's computation.

Indonesian coffee products serve as substitutes for Brazilian and Colombian coffee while complementing Vietnamese coffee as a competitor. Consequently, Indonesia should prioritize protective measures for coffee products and consider non-tariff policies implemented by the destination countries of Indonesian exports. According to Suryana et al. (2023a) findings, the export volume of Indonesian green beans will decrease with the implementation of non-tariff restrictions. On the other hand, non-tariff barriers can be viewed as challenges to enhance competitiveness. For instance, to address non-tariff measures, the quality of coffee can be improved in accordance with the target market's demands, such as by implementing certifications that can elevate the quality and price of Indonesian coffee in the global market.

5 CONCLUSIONS

Indonesia and Vietnam both exhibit comparative advantages and specialization in the export of green beans and instant coffee. However, it is noteworthy that Vietnam consistently maintains a higher level of competitiveness in these product categories than Indonesia. Despite the robust export performance in green beans and instant coffee, both nations face challenges in achieving a comparative advantage in roasted coffee exports on international trade.

Farmers must adopt and implement good agricultural practices to enhance coffee production, quality, and competitiveness to attain certified coffee products for market

access expansion. It entails adherence to rigorous standards and protocols throughout the cultivation, harvesting, and processing stages to ensure optimal quality and consistency. Moreover, government intervention in the form of policies and regulations on downstream coffee products is essential. Such measures should aim to incentivize investment and innovation in value-added processing activities, thereby fostering the development of a robust downstream coffee industry. These efforts must be optimized by involving and participating stakeholders, increasing coordination and collaboration between stakeholders in the context of developing competitive coffee products. The limitations of the study lie in coffee products in general. Therefore, further research could focus on individual kinds of coffee, such as arabica and robusta, examining their distinct market conditions and competitiveness.

6 AUTHORS' CONTRIBUTION

Conceptual Idea: Suryana A.T.; Saleh, Y., Methodology design: Suryana A.T.; Dewi, T.G., Data collection: Dewi, T.G.; Rahayu, H.S.P., Data analysis and interpretation: Saleh, Y.; Rahayu, H.S.P., and Writing and editing: Suryana A.T.; Saleh, Y.; Rahayu, H.S.P.; Dewi, T.G.

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