DYNAMICS OF INDONESIA'S COMPETITIVENESS AND FACTORS AFFECTING COFFEE EXPORTS IN THE CHINA MARKET

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Abstract

Background: As one of the world's largest coffee exporters, Indonesia has significantly increased its coffee export value. The rapidly growing global coffee market, with China being one of the largest, shows a promising potential. Nonetheless, Indonesia is facing stiff competition from other coffee-exporting countries.

Purpose: This study analyzes the dynamics of Indonesia's coffee competitiveness in the Chinese market and the factors affecting coffee exports to the Chinese market.

Design/methodology/approach: This research uses RCA, EPD, X-Model and Gravity models as analytical tools.

Findings/Results: The RCA analysis shows that Indonesia has a comparative advantage during the two research periods, while the EPD analysis finds that Indonesia has successfully improved its competitive position from lagging to rising in the second period. In addition, the X-Model analysis shows that China had a lower potential market for Indonesia in the first period. However, this market becomes optimistic in the next period, so there is much potential to continue increasing coffee exports to this country. In addition, gravity model analysis shows that factors such as the real GDP of exporting countries and China's real GDP affect coffee exports to the Chinese market.

Conclusion: Indonesia's competitiveness has improved in the Chinese market, and the economic growth of exporters and China is essential in driving coffee exports to the Chinese market.

Originality/value (state of the art): This study explicitly highlights China's fast-growing non-traditional coffee market, which currently shows high growth rates in coffee consumption.

Keywords: coffee, EPD, gravity model, X-Model, international trade

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INTRODUCTION

Exports are key indicators of a country's economic strength as they increase foreign exchange and international market share. The agricultural sector contributes significantly to Indonesia's exports, accounting for 12.4% of total non-oil and gas exports by 2022 (BPS, 2023). Coffee commodities are among the mainstays with a high economic potential. Coffee production has increased by an average of 1.86% per year over the past decade, (Kementan, 2022), placing Indonesia as the world's third-largest coffee exporter after Brazil and Vietnam, with production reaching 794,762 tons in 2022. (FAO, 2024b) Indonesia's coffee export value also showed a significant increase from USD 809.2 million in 2020 to USD 1,136 million by 2022 (BPS, 2023).

Along with the development of the global coffee market, Indonesia, as a global coffee producer, can increase its coffee exports to the international market. Based on BPS data (2023), traditional destination countries for Indonesian coffee exports include the United States with a share of 15.07%, Egypt with 12.67%, and Spain, Malaysia, Japan, and Italy, each with a share between 6.38% and 8.63%. These countries have long been Indonesia's main coffee markets, especially robusta and arabica coffee types. However, over the last five years, Indonesia's coffee exports to China have shown a significant upward trend, with an average annual increase of 0.43%. Although the volume is still smaller than in traditional markets, China's potential continues to grow along with the rising middle class, the shift in lifestyle from tea to coffee, and the rapid growth of local coffee shops such as Luckin Coffee. This opens up great opportunities for Indonesia to expand its coffee export market to China as a growing nontraditional market (Wang, 2012; Wahyuwanti, 2023).

The data show that coffee consumption in China has grown by 11.28% per year in the last five years, well above the global average of 0.78%, (USDA, 2024) although it is still dominated by instant and blended coffee. In the long run, Chinese consumers' preferences could shift to arabica and specialty coffee, especially among the upper middle class(Mattingly, 2016). As a robust coffee producer, Indonesia has an excellent opportunity to increase exports to China, coupled with the existence of Indonesia's premium arabica coffee from Gayo, Toraja, Wamena, Kintamani, and Flores (Anggraini, 2024; Mafazi et al. 2024). In 2022, China's coffee imports reached 124,676 tons (Trade Map, 2024) and were supplied by nine major exporting countries: Indonesia, Vietnam, Brazil, Colombia, Ethiopia, Malaysia, Uganda, Guatemala, and the United States.

Figure 1 shows China's coffee import trends during 2012-2022. Indonesia and Vietnam dominated initially, but Vietnam's exports have fluctuated sharply since 2017 due to climate change and land conversion to durian (Puspapertiwi & Pratiwi, 2024). This instability prompted China to seek more reliable suppliers and open opportunities for Indonesia to expand its exports by offering a more stable and sustainable supply. However, Indonesia competes with Brazil as the world's largest exporter, which excels in producing high-quality arabica(Hardianti, 2016). However, Indonesia's robust coffee and its Arabica varieties still provide great opportunities for export to the Chinese market. Therefore, given the dynamics at play, further research is needed on how Indonesia can capitalize on this opportunity.

Previous studies examined Indonesia's coffee competitiveness and exports to major destination countries. Putro et al. (2024) find that Indonesia has a medium comparative advantage in the Japanese market. Vrizal and Yanuar (2024) found that Indonesia had a 'Leading Retreat' position in 2016-2022. Ananda et al. (2023) found high RCA values in destination countries, such as the United States, Egypt, and Germany. Meanwhile, Muhlis and Sulistyaningsih (2023) recorded an average RCA value of 1.86 in 2017-2021, indicating strong global market competitiveness. Amanda and Rosiana (2023) also show a positive trend in Indonesia's coffee competitiveness based on RCA, DRCA, and ISP. However, most of these studies still focus on traditional markets, such as the United States, Japan, and European countries, so few studies have specifically analyzed the competitiveness of Indonesian coffee in the Chinese market. Therefore, this study is essential to fill this gap by using the Revealed Comparative Advantage (RCA), Export Product Dynamics (EPD) approach, and gravity model to analyze Indonesia's competitiveness in China and the factors that influence coffee exports to China.

METHODS

This study uses secondary data from 2002 to 2023 from nine major coffee-exporting countries: Indonesia, Vietnam, Brazil, Colombia, Ethiopia, Malaysia, Uganda, Guatemala, and the United States. These data were provided by relevant institutions such as the Trade Map, World Bank, and Center d'Etudes Prospectives at d'Information Internationales (CEPII). Based on the completeness of the data, the HS code used was 0901 (coffee, roasted or decaffeinated; coffee husks and skins; coffee substitutes).

Revealed Comparative Advantage (RCA) measures the export performance of a product from a country by calculating the value of exports to the value of total exports and then comparing the value of exports to the value of total world exports. RCA can be formulated as follows:

$$RCA = (Xij/Xt)/(Wj/Wt)$$

where Xij = Export value of the coffee commodity (j) from country I to China; X = Total export value from country I to China; Wj = World export value of the coffee commodity (j) to China; Wt = World's total export value to China; and i is the leading coffee exporting country to China.

The RCA value neutralizes the impact of a country's economic size and can be used to compare the performance of commodity export activities among countries (Erkan & Yildirimci, 2015). If the RCA value of a country for a commodity is > 1 (more than one), then the country is intensely competitive; otherwise, if the RCA value of a country for a commodity < 1 (Less than one), then the country is weakly competitive. The greater the RCA value, the higher is the country's comparative advantage.

EPD is a technique aimed at determining the position of a product in a target market, and whether the product is competitive and changing rapidly (dynamic). The dynamism of a product can be shown in the EPD matrix, which consists of two components, namely market attractiveness, by examining the magnitude of the increase in demand for a product and information on business strength, which can be seen from the magnitude of the growth in the product's market share.

To measure the dynamism of the product in the market, four EPD quadrants are used: rising stars, falling stars, lost opportunities, and retreats, which are presented in Figure 2. Mathematically, the dynamic formula for export product is as follows:

X-axis: Growth in commodity market share in exporting countries

$$\frac{\sum_{t=1}^{T}((\frac{Xij}{Wij})_t \times 100\% - (\frac{Xij}{Wij})_{t-1} \times 100\%)}{T}$$

Y-axis: Growth in the total market share in the Chinese market

$$\frac{\sum_{t=1}^{T}((\frac{Xt}{Wt})_t \times 100\% - (\frac{Xt}{Wt})_{t-1} \times 100\%)}{T}$$

Description: Xij = Export value of coffee from exporting countries to China (000 US$); Wij = World coffee export value to China (000 US$); Xt = Total export value of exporting countries to China (000 US$); Wt = Total export value of world to China (000 US$); t = year t; t-1 = previous year; T = Total years of analysis.
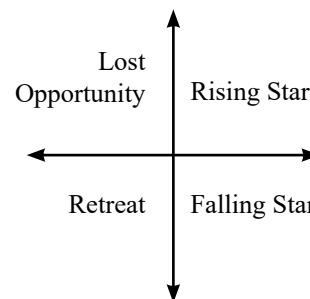

Figure 2. EPD method competitive position quadrant (Esterhuizen, 2006)

The X-model method combines RCA with EPD, which helps determine how the potential or opportunity of a product in a particular region (Nurhayati et al., 2019) with the X-model allows countries to concentrate their trade markets (Zainuddin, 2020). Another advantage of the X model is that it can estimate the value of competitiveness as a whole because it considers competitiveness from two sides: RCA and EPD. The decision-making process for the X model is presented in Table 1.

Table 1. The X-model decision

RCA	EPD	X-Model
RCA>1	Rising Star	Optimistic Market
	Lost Opportunity	Potensial Market
	Falling Star	Potensial Market
	Retreat	Less Potensial Market
RCA<1	Rising Star	Potensial Market
	Lost Opportunity	Less Potensial Market
	Falling Star	Less Potensial Market
	Retreat	No Potensial

The gravity model was used to analyze the determinants of coffee exports to China. Referring to Tinbergen (1962) and Pöyhönen (1963), this model states that trade is influenced by economic size (GDP) and distance between countries. The dependent variable is the volume of coffee exported from the main coffee-exporting countries to China: Indonesia, Vietnam, Brazil, Colombia, Ethiopia, Malaysia, Uganda, Guatemala, and the United States. These nine countries were chosen not only because they are the leading coffee exporters to China but also because they have complete data and represent 85 percent of the coffee exported to China. For the gravity model equation, ln (natural logarithm) is used to fulfill the classical assumption test, and to ensure that the resulting model is unbiased, the gravity model equation becomes:

$$\ln EXP_{ijt} = \beta_0 + \beta_1 \ln GDPP_{it} + \beta_2 \ln GDPC_{jt} + \beta_3 \ln DISC_{ijt} + \beta_4 \ln EXR_{ijt} + \beta_5 \ln PRC_{jt} + \epsilon_{it}$$

Description: EXP_{ijt} = export volume of coffee from the exporting country to China in year t (Ton); β_0 = intercept; $\beta_{1,2,3,..n}$ = constant independent variable; $GDPP_{it}$ = real GDP per capita from the exporting country in year t (US\$); $GDPC_{jt}$ = real GDP per capita from China in year t (US\$); $DISC_{ijt}$ = economic distance from exporting country to China in year t (Km); EXR_{ijt} = real exchange rate from exporting country to US dollar in year t (US\$); PRC_{jt} = coffee price from exporting country to China in year (US\$/ton); i = time-series data from the exporting country; j = time-series data from China; t = period from 2002 to 2023; and is the error.

Figure 3 illustrates the framework of this study. Indonesia is one of the world's largest coffee producers, making it one of the largest exporters. Coffee consumption in China has significantly increased along with global coffee market development, although the country has historically not had a strong coffee consumption culture. In addition, the declining trend in Vietnam's coffee export volume to China, the country's leading coffee exporter, opens up opportunities for Indonesia to strengthen its position in the Chinese coffee market. Therefore, this study aims to analyze the competitiveness of Indonesian coffee in the Chinese market and the factors affecting coffee exports to the Chinese market. The EPD, RCA, and X-Model analyses were used to analyze competitiveness, while the gravity model determined the factors affecting coffee exports to the Chinese market.
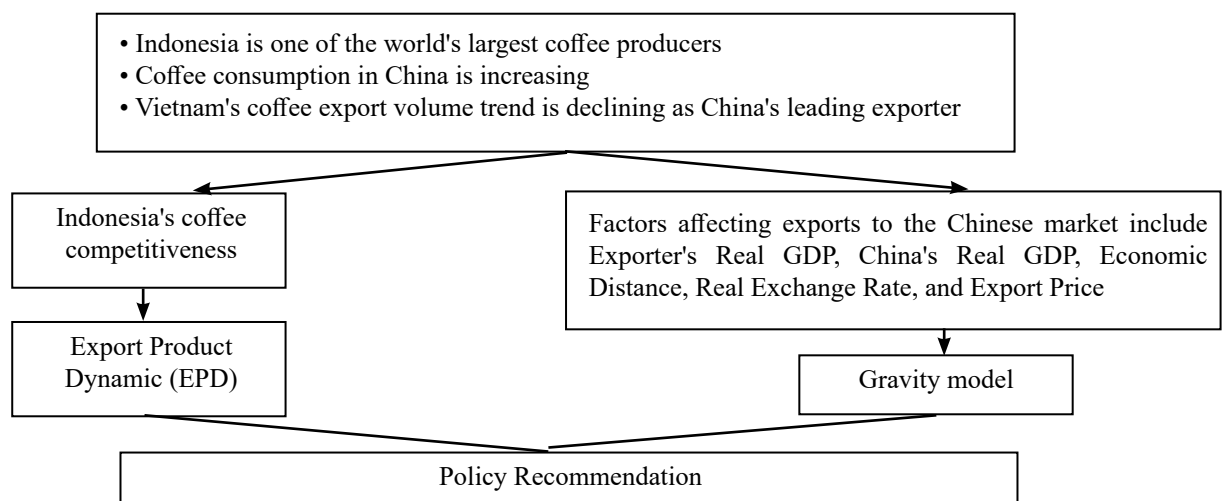

Figure 3. Research framework

RESULTS

Dynamics of Indonesian Coffee's Competitive Position in the China Market

This study divided the analysis period into two groups based on the trend in Vietnamese coffee exports to China. The first period (2002-2016) shows Vietnam's dominance as a major exporter. The second period (2017-2023) shows a decline in Vietnam's exports due to production instability, which may lead to a change in the supplier structure in the Chinese market, opening up opportunities for other countries, including Indonesia, to fill the market void.

Revealed Comparative Advantage (RCA) shows the dynamics of the comparative advantage of coffee exports from Indonesia and other exporting countries in the Chinese market (see Table 2). In the first period, Indonesia and seven other coffee-exporting countries, namely Vietnam, Brazil, Ethiopia, Colombia, Guatemala, Uganda, and the United States, showed RCA > 1, which means that the coffee commodities of these eight countries have a comparative advantage or strong competitiveness. Malaysia showed RCA <1, which means that Malaysian coffee commodities in this period were weakly competitive in the Chinese market. Based on the RCA calculations, Uganda had the highest RCA value, followed by Guatemala and Ethiopia. Indonesia's RCA value was 5.691, which was quite competitive but far below that of other coffee exporters. In the second period, most exporting

countries, including Indonesia, experienced a decrease in RCA to 2,290. However, RCA > 1 indicates that Indonesia remains competitive in the Chinese market. However, Ethiopia and Uganda recorded sharp spikes, strengthening their comparative advantage. Vietnam experienced a significant decline from 95,736 to 6,178, which is in line with the decrease in coffee exports to China. The reduction in Indonesia's RCA value shows that Indonesia's position in exporting coffee to China is weaker than that of other exporting countries. This means that although Indonesia still sends coffee to China, its share in global coffee exports is decreasing.

An EPD analysis was used to map the shifting position of Indonesian coffee to its competitors in the Chinese market (Table 2). Indonesia is in a retreat position, meaning that there has been a decrease in the market share of coffee exports and Indonesia's total exports to the Chinese market. This decline was due to a significant decrease in market share in 2006, 2014, and 2016 due to a 0.79% decline in domestic coffee productivity caused by unfavorable climate and weather conditions (Rosiana et al., 2017). The United States is also in the same position; this situation can be caused because it is one of the world's largest coffee-importing countries (Manalu et al., 2022), exported coffee is mainly processed or re-exported, causing the price of this country's coffee to be much higher than that of other exporters (Ibnu & Firdasari, 2023). Based on Trade Map data (2024), the United States exports the largest amount of coffee in the world, with its export value reaching 317 million US$ by 2023.

Table 2. Export competitiveness of Indonesian coffee and competitor countries in the China market in the first (2002-2016) and second periods (2017-2023)

Exporting Countries	First Period (2002-2016)			Second Period (2017-2023)		
	RCA	EPD	X-Model	RCA	EPD	X-Model
Indonesia	5.691	Retreat	Less Potensial Market	2.290	Rising Star	Optimistic Market
Vietnam	95.736	Rising Star	Optimistic Market	6.178	Lost Opportunity	Potensial Market
Brazil	2.894	Lost Opportunity	Potensial Market	2.563	Rising Star	Optimistic Market
Ethiopia	118.474	Rising Star	Optimistic Market	675.81	Falling Star	Potensial Market
Colombia	77.459	Lost Opportunity	Potensial Market	34.952	Rising Star	Optimistic Market
Malaysia	0.552	Rising Star	Optimistic Market	3.321	Rising Star	Optimistic Market
Guatemala	318.277	Lost Opportunity	Potensial Market	589.91	Rising Star	Optimistic Market
Uganda	375.008	Rising Star	Optimistic Market	603.23	Rising Star	Optimistic Market
United State of America	1.660	Retreat	Less Potensial Market	0.613	Faliing Star	Potensial Market

Other exporters, namely Brazil, Colombia, and Guatemala, are in a lost opportunity position, meaning that there is a decrease in the market share of coffee commodities. However, total exports in the Chinese market have increased. This is because the Chinese market has not been the primary focus of coffee exports in these three countries. In addition, the decline in the coffee area in Brazil, which reached 1.45% per year, and the decline in production in Guatemala, which reached 46.9% in 2009, have led to a decrease in the country's market share in the Chinese market (FAO, 2024).

In the second period (2017-2023), as shown in Table 2, Vietnam experienced a decline in competitiveness in the Chinese coffee market, as indicated by its shift to a position of lost opportunity. This decline was caused by a 9.8% decline in Vietnam's coffee production, or 3.7 million bags, due to several factors, such as reduced fertilizer use, high and prolonged rainfall in coffee production centers, and farmers' shift to other fruit crops, such as durian, which are considered more economically profitable (ICO 2023; USDA, 2023).

In contrast, Indonesian, Brazilian, Colombian, and Guatemalan coffees experienced a shift in status from the previous category (retreat and lost opportunity) to rising stars, capitalizing on the market gap left by Vietnam. Brazil and Indonesia have benefited from supplying two types of coffee: robusta and arabica. At the same time, Colombia and Guatemala, as Arabic producers, also managed to achieve a rising star position (ICO 2023). Malaysia and Uganda have maintained their positions as rising stars. Although Indonesia has reached a rising position, strengthening its competitiveness is still needed. This can be achieved by improving product quality and supply consistency (Manalu et al., 2022).

In the United States, coffee has improved from retreats to falling stars. This means that the export market share of US coffee has increased, even though the total export market share has decreased. This decline in total export market share can occur because of the trade war between China and the United States (Laksono et al., 2020). Ethiopia holds the same position. However, this position shows a decline in Ethiopia's position from previous period, when it was in the rising star position. However, Ethiopia's coffee export market share has increased.

The X model provides an overview of the market potential of Indonesia and other exporting countries in China (Table 2). In the first period, Indonesia and the United States were categorized as Less Potential Markets, which means that although the coffee of these two countries is competitive in China, the retreat position shows that China does not want coffee products from these two countries. Vietnam, Ethiopia, Uganda, and Malaysia are already in Optimistic Market positions, indicating a significant opportunity for market expansion. In this period, other exporting countries, namely Brazil, Colombia, and Guatemala, had smaller market potentials. Although the coffee exports of these three countries have lost opportunities, they still have the potential to develop because their competitiveness is strong.

In the second period, Indonesia's position improved to become an Optimistic Market, reflecting the increasing potential of the Indonesian coffee market in China. In addition to Indonesia, countries such as Brazil, Colombia, Malaysia, Guatemala, and Uganda have succeeded in increasing the potential of their coffee export markets to China. However, Vietnam, Ethiopia, and the United States have moved to potential markets, indicating the need for export intensification efforts.

Factors Affecting Coffee Exports in the China Market

The gravity model was used to analyze the factors affecting coffee exports to China. In the gravity model, the three models formed will be tested first, namely, the fixed effect model (FEM), random effect model (REM), and common effect model (CEM), which is carried out using the Chow, Hausman, and Lagrangian tests.

Based on the results of the model suitability test, the Chow test shows a small F probability value of α 5% (0.05), namely 0.000, which indicates that the best model is FEM; subsequently, the Hausman test is carried out, which shows a chi-square probability value above 0.05, namely 1.00, which means that the best model is REM; the last test uses the Lagrangian test, which shows the Breusch-Pagan probability value below 0.05, namely 0.000, which means that the best model is REM. The results showed that the REM model was the best model. After the best model is known, the next step is to conduct a classic assumption test comprising the heteroscedasticity, multilinearity, and autocorrelation tests.

In the classical assumption test, it was found that the model passed the multicollinearity test with a correlation value below 0.80 (Ghozali, 2006). However, the model was found to be affected by heteroscedasticity because the Breusch-Pagan test value showed results below 0.05, namely 0.0427, which means that the error variance is not homogeneous across observations. This also occurs in the autocorrelation test, which shows a run test value below 0.05, indicating that the model is affected by autocorrelation. As heteroscedasticity and autocorrelation problems can cause inconsistent estimates, the REM model is handled with standard error correction using a robust standard error(Rizki et al. 2022).

Table 3 presents the results of the model estimation corrected for standard error, t-statistics, and probabilities. The results of the REM model show an R-squared value of 0.4654, which means that 46.54% of the variation in coffee exports to China can be explained by the independent variables used in the model and the remaining 53.46% are other variables not included in the model. The F-statistic shows a value of 0.0000, which is below the alpha level of 0.05, meaning that, simultaneously or together, the independent variables can explain the dependent variable or together can explain the variation in Indonesian coffee exports to China.

The results of the gravity model analysis in Table 2 show that exporters' real Gross Domestic Product (GDP) per capita is positive and significant at the 10% level. This is in line with research by Abafita and Tadesse (2021) and Chen et al. (2023), who find that exporter GDP has a positive and significant effect on increasing exports to destination countries. The study found that the higher the exporter's GDP, the greater the capacity to produce or supply, and thus the higher the level of exports. Additionally, according to Freitas et al. (2023), increased GDP triggers increased production volume, capacity, and purchasing power due to increased income.

China's real Gross Domestic Product (GDP) per capita is positive and significant at the 5% level. This is in line with research by Abafita and Tadesse (2021), Chen et al. (2023), and Rindayanti and Akbar (2022), who find that the GDP of the importing country has a positive and significant effect on increasing exports to partner countries. An increase in people's purchasing power usually follows an increase in income, which encourages the demand for imported goods from exporting countries.

The economic distance of the exporting countries from China is positive and insignificant at the alpha level. Picciolo et al. (2012) found that distance does not play an important role in shaping the structure of world trade. According to this theory, economic distance is negatively related to an increase or decrease in a country's exports. The insignificant positive coefficient indicates that transportation costs proxied through economic distance are not a significant consideration in the coffee trade to China. This indicates that coffee demand in China tends to be inelastic to logistics costs; therefore, even if economic distance increases, it does not significantly reduce export volumes. Le (2017) also found that economic distance can positively affect export flows, especially when the importing country is the primary market.

Table 3. Estimation of Coffee Export Model in the China Market

Variable	Coefficient	Std. Error	t-statistic	Prob.
Constanta	-18.0606	5.821964	-3.10	0.002
ln GDPP*	0.4219508	0.1912387	2.21	0.058
ln GDPC**	3.893247	1.374974	2.83	0.022
ln DISC	0.1565585	0.9720851	0.16	0.872
ln EXR	0.3159209	0.2026183	1.56	0.119
ln PRC	-0.0701638	0.4994301	-0.14	0.888
R-squared	0.4654			
Prob(F-statistic)	0.0000			

Note: **) significant at the level of 0.05; *) significant at the level of 0.1

The real exchange rate of the exporting country is positive and insignificant at the fundamental level. In theory, exchange rate depreciation increases a country's exports (Sukirno, 2008), indicating a positive relationship between exchange rates and exports (Hasan et al., 2015). However, this study is in line with Erem (2024) and Argaie (2021), who found that changes in exchange rates do not significantly affect exports. Argaie (2021) mentioned that despite changes in the exchange rate, depreciation, or appreciation, it did not affect or cause the growth or promotion of coffee exports.

Export prices are negative and insignificant. Other dominant factors may cause prices to have insignificant effects on exports. In addition, it was also found that since 2021, the Chinese domestic company Luckin Coffee collaborated with the Ethiopian embassy to purchase 1,000–2,000 tons of quality coffee beans for the next few years (Xu, 2024). With cooperation, the price factor becomes less decisive in coffee exports to China.

Managerial Implication

Based on the results of this study, the managerial implications that can be drawn are the importance of formulating an adaptive export strategy for the dynamics of global competition, such as the decline in Vietnamese exports that Indonesia has successfully utilized to improve its competitive position in the Chinese market. To improve competitiveness in the international market, exporters must strengthen the differentiation of Indonesian coffee products by highlighting the uniqueness of taste, geographical origin, and quality certification. In addition, export managers are advised to allocate more resources to the changing status of the Chinese market from less potential to optimism. The finding that the economic growth of exporters and China significantly affects coffee exports also indicates that macroeconomic indicators must be considered in future export planning.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study found that changes in the dynamics of Vietnamese coffee exports to China affected the competitive landscape of coffee in that market. The

RCA analysis showed that Indonesia had a comparative advantage over the two periods, while the EPD analysis found that Indonesia managed to improve its competitive position from backward to upward in the second period. These results suggest that Indonesia can capitalize on opportunities arising from Vietnam. In addition, the X-Model analysis showed that China became a less potent market for Indonesia in the first period. However, this market became optimistic in the next period, so there is much potential to continue to increase coffee exports to this country.

The results of the gravity model with the best REM model, which has been improved with robust standard errors, show that the variables of the real GDP of the exporting country and the real GDP of China significantly affect coffee exports in the Chinese market. By contrast, economic distance, real exchange rate, and export price do not affect coffee exports in the Chinese market. These results suggest that the economic growth of exporters and China is important in driving coffee exports to the Chinese market.

Recommendations

The government should establish policies that encourage increased Indonesian coffee exports to the Chinese market by taking advantage of the momentum of the declining competitiveness of major competitor countries such as Vietnam. This effort can be made by strengthening trade promotion, increasing market access, and supporting cooperation between Indonesian exporters and local partners in China. In addition, export product development policies must be directed at increasing the added value, quality standardization, and certification, such as geographical indications and sustainability, so that the competitiveness of Indonesian coffee is more substantial. Given that economic growth has been proven to significantly impact exports, the government needs to maintain macroeconomic stability and encourage growth in the agricultural sector through infrastructure support, production incentives, and strengthening the capacity of domestic coffee farmers.

CONFLICTS OF INTEREST: The authors declare no conflict of interest.

REFERENCE

Abafita J, Tadesse T. (2021). Determinants of Global Coffee Trade: Do RTAs Matter? Gravity Model Analysis. *Cogent Economics and Finance*. Vol (9):1892925. doi: 10.1080/23322039.2021.189295

Anggraini, R. (2024). Analisis Organoleptik Seduhan Varietas Kopi Lokal dengan Teknik Manual Brew. AGROFOOD, 6(2), 1–8.

Badan Pusat Statistik. (2023). Laporan Perekonomian Indonesia 2023 Badan Pusat Statistik. www.freepik.com

Badan Pusat Statistik. (2023). Buku Outlook Komoditas Perkebunan Kopi. https://satudata.pertanian.go.id

Bintoro, D., & Khoirudin, R. (2021). Analisis Perdagangan Komoditas Kopi Antara Indonesia dan 14 Negara Mitra Dengan Pendekatan Model Gravitasi. PJEB, 1(2).

Chen F, Ahmad S, Jiang G, Chen J. (2023). Factor Affecting Textiles Products Export of Major Producer: A Gravity Model Approach. *Sage Journals*. Vol 13(4). doi: 10.1177/215822440231213688.

Erem E. (2024). The Effect of Excchange Rate Volatility on Export: The Case of Canada's Export to United States. *International Journal of Economics and Finance*. Vol 16(8). doi: 10.5539/ijef.v16n8p65c.

Esterhuizen, D. (2006). Measuring and Analyzing Competitiveness in the Agribusiness Sector: Methodological and Analytical Framework. University of Pretoria.

Food and Agriculture Organization. (2024a). Production Indices. Fao.Org. https://www.fao.org/faostat/en/#data/QI

Food and Agriculture Organization. (2024b). Top 10 Country Production of Coffee, green. Fao.Org. https://www.fao.org/faostat/en/#rankings/countries_by_commodity

Freitas, V. P. S. F., Nuryartono, N., & Rifin, A. (2023). Analisis Faktor-Faktor yang Memengaruhi Ekspor Kopi di Timor-Leste. Jurnal Agribisnis Indonesia, 11(1), 174–189. https://doi.org/10.29244/jai.2023.11.1.174-189

Ghozali, I. (2006). Aplikasi Analisis Multivariate dengan Program IBM SPSS 23. BPFE Universitas Diponegoro.

Gujarati, D. N. (2006). Dasar-Dasar Ekonometrika (Suryadi Saat & Wibi Hardani, Eds.; Julius A. Mulyadi, Trans.; 3rd ed.). Erlangga.

Hardianti, I. D. (2016). Upaya Brazil untuk Mempertahankan Posisi Produsen Terbesar dalam Pasar Kopi Global. Jurnal Analisis Hubungan Internasional, 5(3), 186–196.

Ibnu M., Firdasari. (2023). Aktivasi Re-Ekspor Kopi Dunia dan Implikasinya Bagi Indonesia. JAKP, 6 (1), 57-70.

International Coffee Organization. (2023). Coffee Report and Outlook. Fao.Org. https://icocoffee.org/documents/cy202324/Coffee_Report_and_Outlook_December_2023_ICO.pdf

Iscaro, J. (2014). The Impact of Climate Change on Coffee Production in Colombia and Ethiopia. Global Majority E-Journal, 5(1), 33–43.

Kementrian Pertanian. (2022). Outlook Komoditas Perkebunan Kopi. https://satudata.pertanian.go.id/assets/docs/publikasi/Buku_Outlook_Kopi_2022_compressed.pdf

Laksono VB, Simanjuntak TR, De Fretes CH. (2020). Dampak Perang Dagang Amerika Serikat-Cina Terhadap Pertumbuhan Investasi Asing di Vietnam Tahun 2018-2019. Cakrawala Jurnal Penelitian Sosial, 9(2), 117-148

Le, T. H. (2017). Does economic distance affect the flows of trade and foreign direct investment? Evidence from Vietnam. Cogent Economics and Finance, 5(1), 1–4. https://doi.org/10.1080/23322039.2017.1403108

Mafazi, N., Jalil, Z., & Elin, Y. (2024). Karakterisasi Kopi Unggulan Indonesia Jenis Arabika Sangrai Medium To Dark Menggunakan Fourier Transform Infra Red. Jurnal Teori dan Aplikasi Fisika, 12(02), 63–73.

Manalu, S. T. D., Harianto, Suharno, & Hartoyo, S. (2022). Analisis Daya Saing Serta Faktor-Faktor yang Memengaruhi Pangsa Pasar Negara Eksportir Utama Kopi di Negara Importir Utama Kopi. Buletin Ilmiah Litbang Perdagangan, 16(1), 1–24. https://doi.org/10.30908/bilp.v16i1.445

Mattingly, J. W. (2016). Coffee In China: Market Trend and Consumer Demand (Master's thesis). Lexington, University of Kentucky.

Nhien, N. T. H. (2016). The Competitiveness Of Vietnamese Coffe Into The Eu Market. Centria University of Applied Sciences.

Picciolo, F., Squartini, T., Ruzzenenti, F., Basosi, R., & Garlaschelli, D. (2012). The role of distances in the World Trade Web. 2012 Eighth International Conference on Signal Image Technology and

Internet Based Systems, 784–792. https://doi.org/10.1109/SITIS.2012.118

Poyhonen, P. (1963). A Tentative Model for the Volume of Trade between Countries A Tentative Model for the Volume of Trade Between Countries. In Source: Weltwirtschaftliches Archiv, Bd (Vol. 90, pp. 93–100). Weltwirtschaftliches Archiv,.

Prajanti, D. S. W., Pramono, S. E., & Adzim, F. (2020). Factors Influencing Indonesia Coffee Exports Volume. International Conference on Research and Academic Community Services (ICRACOS 2019), 41–45.

Puspapertiwi, E. R., & Pratiwi, I. E. (2024, May 9). Harga Kopi di Vietnam Melambung Tinggi Gara-Gara Petani Lebih Pilih Tanam Durian. Kompas.Com. https://amp.kompas.com/tren/read/2024/05/09/090000965/harga-kopi-di-vietnam-melambung-tinggi-gara-gara-petani-lebih-pilih-tanam

Rindayati W., Akbar R. (2022). Competitivness and Determinan of Indonesian Frozen Srimph Export to Non-Traditional Markets. JMA, 19(3):367-378

Rizki, M. I., Gumelar, F., Cerelia, J. J., Ammar, T., & Nugraha, A. (2022). Pemodelan Regresi Data Panel Pada Faktor yang Mempengaruhi Tingkat Pengangguran Terbuka di Jawa Barat. Prosiding Seminar Nasional Matematika, Statistika, dan Aplikasinya, 147–161.

Rosiana, N., Nurmalina, R., Winandi, R., & Rifin, A. (2017). Tingkat Keunggulan Komparatif Produsen Utama Kopi Dunia. Buletin Ilmiah Litbang Perdagangan, 11(2), 227.

Sihotang, J., Nopeline, N., Purba, M. L., & Zai, Y. (2024). Studi Determinan Ekspor Kopi Indonesia Ke Amerika Serikat. EKUILNOMI : Jurnal Ekonomi Pembangunan, 6(1), 2614–7181. https://doi.org/10.36985/ekuilnomi.v6i1.1106

Sukirno, S. (2008). Teori Pengantar Makro. RajaGrafindo Persada.

Trade Map. (2024). List of Supplying Markets for a Product Imported By China. Trademap.Org. https://www.trademap.org

Trade Map. (2024). List of countries having reported their reexports. Trademap.Org. https://www.trademap.org

United State Department of Agriculture. (2024). Coffee: World Market and Trade. Usda.Library.Cornell.Edu.https://usda.library.cornell.edu/concern/publications/m900nt40f?locale=en

United States Departement of Agriculture. (2023). CoffeeSemi-annual Vietnam. Fas.Usda.Gov. https://www.fas.usda.gov/data/vietnam-coffee-semi-annual-7

Wahyuwanti, R. A. (2023). Pengaruh Proses Transnasionalisasi Coffehouse Company "Starbucks Coffee" Terhadap Budaya Tradisional Minum Teh di China. Jurnal Transformasi Global, 9(1), 1–14.

Wang, J. (2012). The Coffee/Café-Scape in Chinese Urban Cities. M/C Journal, 15(2). https://doi.org/10.5204/mcj.468

Xu, G. (2024). SWOT Analysis of Coffee's Marketing Strategies: A Case Study of Luckin Coffee in China. SHS Web of Conferences, 193, 01006. https://doi.org/10.1051/shsconf/202419301006