

Enhancing Indonesian Coffee Competitiveness in the US Market: Competitor Analysis and Development Strategy

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Abstract

Coffee is one of Indonesia's main plantation commodities with high export value. As the world's leading coffee producer, Indonesia actively exports coffee as part of its national economic strategy. This study aims to analyze the competitiveness and performance of Indonesian coffee exports in the United States market by comparing them with competing countries, namely Brazil, Canada, Italy, and Ethiopia. The methods used in this study are Revealed Comparative Advantage (RCA) and Constant Market Share (CMS). The data analyzed includes global export growth, coffee export value, and total commodity export value from Indonesia and competitor countries during the 2011-2022 period. The results of the study show that although Indonesian coffee has a comparative advantage over Canada and Italy, its competitiveness is still lower than that of Brazil and Ethiopia. In addition, the performance of Indonesian coffee exports to the United States is still relatively weak, with average growth that is below the average world export growth.

Keywords: Competitiveness, Coffee Exports, Revealed Comparative Advantage (RCA), Constant Market Share (CMS), Indonesia, United States.

INTRODUCTION

Natural resources support Indonesia's economy. The leading industries include the plantation sector with a number of leading commodities that are export anchors. Coffee is one of Indonesia's plantation commodities with the highest export value. Indonesia, as the world's leading coffee producer, is actively exporting coffee as part of its national economic strategy.

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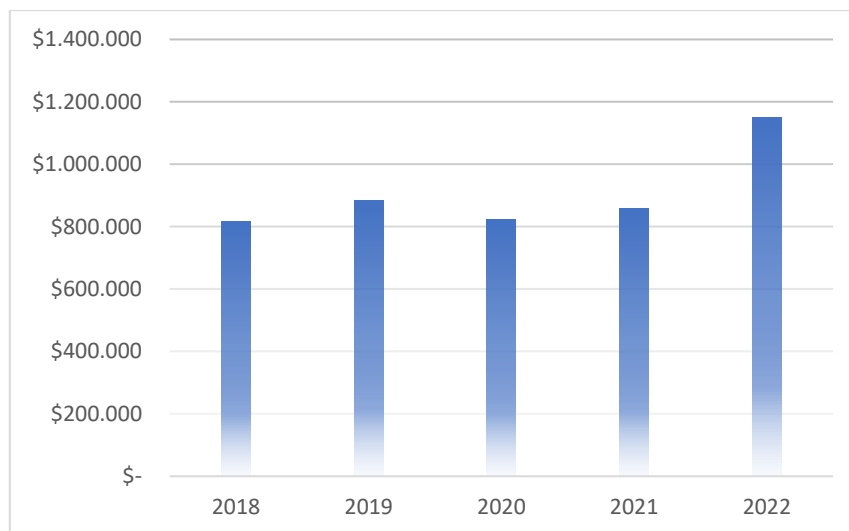


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The selection was based on several reasons, such as the religious nature of the quality coffee, the supportive climate, and a long history as a quality coffee producer. Moreover, drinking coffee has become part of Indonesian culture.

Where the majority of Indonesian culture in enjoying coffee drinks is by gathering in a coffee shop or café while socializing with other people. So that coffee is indirectly the driver of the presence of various infrastructures in Indonesia (Gumulya & Helmi, 2017). Indonesia's coffee production fluctuated in 2020–2022. In 2020, production reached 762.38 thousand tons, up 3.12% to 786.19 thousand tons in 2021, then down 1.43% to 774.96 thousand tons in 2022. The majority of coffee produced is robusta (Central Statistics Agency, 2023)

Indonesia exports coffee not only to earn foreign exchange, but also to expand the global market and introduce its coffee wealth. Indonesian coffee is famous for its distinctive taste and aroma, such as Gayo, Toraja, and Mandheling Arabica. Among these types of coffee, Arabica excels due to its more complete physical and chemical characteristics (Adzkiya et al., 2022).



Graphs 1 The Value of Indonesian Coffee Exports to the World

Source : ITC Trademap (In 000 US\$)

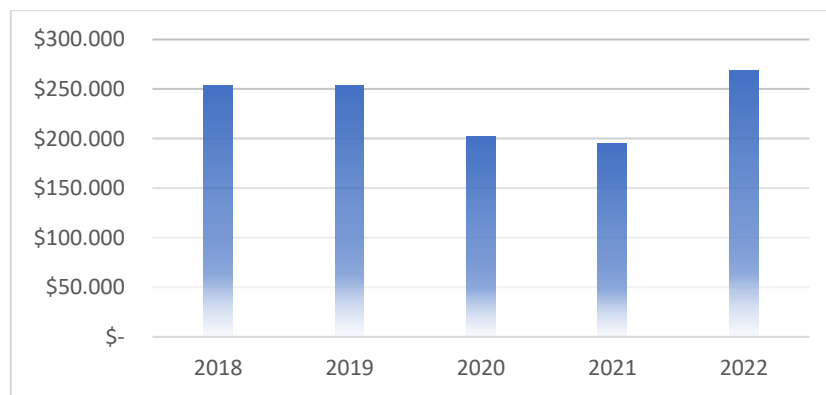
Indonesia's coffee exports have the potential to grow even though they had declined in 2020. Through exports, Indonesia can expand trade, increase global competitiveness, and empower local farmers. However, challenges such as price



fluctuations and sustainability issues need to be addressed with a sustainable approach. Coffee exports play an important role in economic growth and promotion of Indonesian coffee in the world. Thus, coffee exports are an important step in encouraging economic growth while promoting the image and excellence of Indonesian coffee at the international level.

Data from ITC Trademap shows that the United States is the main destination for Indonesian coffee exports. Since 2012, the country has been the largest consumer of coffee. In 2018, 68% of U.S. citizens over the age of 18 consumed coffee daily, up from 62% in 2017, according to a research journal (Shertina, 2019).

This fact opens up opportunities for Indonesia to expand its market share in coffee exports to the United States. In addition, strengthening diplomatic relations can open up opportunities to increase export-import trade between the two countries.

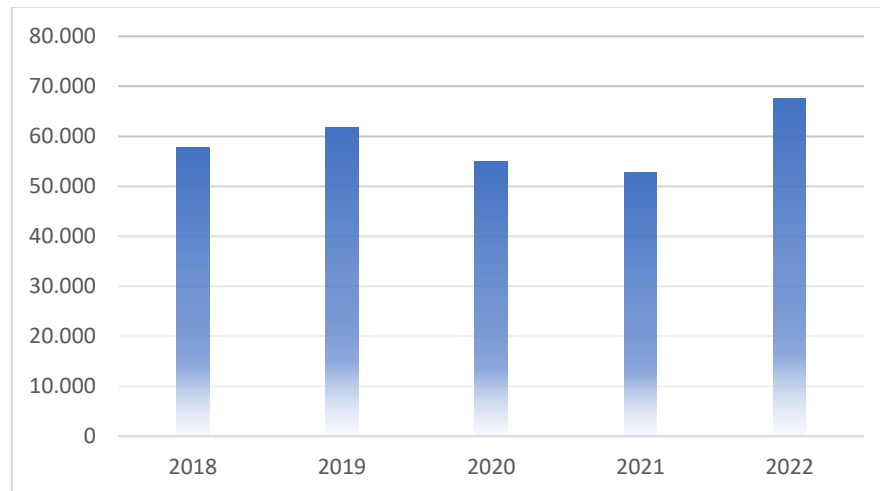


Graph 2 Value of Indonesian Coffee Exports to the United States

Source : ITC Trademap (In 000 US\$)

ITC Trademap data shows that the value of Indonesia's coffee exports to the United States has fluctuated, falling in 2020 and 2021, but rising again in 2022. Based on ITC data (2022), it is known that a number of countries are the top coffee exporters in the United States market such as Brazil, Canada, Ethiopia, and Italy. Brazil is the largest coffee exporter to the United States with exports worth US\$ 9.78 million in 2022, followed by Canada (US\$ 620,414), Ethiopia (US\$ 205,287), and Italy (US\$ 146,411). Indonesia, despite being a major coffee producer, ranks 11th with an export value of US\$ 332,948.

The main type of coffee exported by Indonesia is HS 090111 coffee, with the highest export in 2022 of US\$ 268,046 and the lowest in 2019 of US\$ 194,769.



Graphs 2 Quantity of Indonesian Coffee Exports to the United States

Source : ITC Trademap (In Tons)

ITC Trademap data shows that Indonesia's coffee exports to the United States have fluctuated, declining in 2020 and 2021, but increasing in 2022. In terms of quantity, Indonesia ranks 8th, higher than Canada in 10th position, although it is still below Brazil which is consistently the largest exporter. Brazil's advantage reflects the theoretical principle of comparative advantage in the effectiveness of coffee production and export.

An increasingly open and free international trade is both a challenge and an opportunity for Indonesia, especially given its position as one of the world's largest coffee producers. Thus, measures to maintain and optimize the competitiveness of Indonesian coffee exports are very important so that the country can maintain its comparative advantage compared to competitors.

Therefore, with the increasingly fierce competition in international trade, especially coffee exports, Indonesia is obliged to improve the quality of Indonesian coffee export products in order to have a competitive advantage over similar products from competing countries.

Competitiveness is very important in export-import performance because it affects the success of international trade competition. Export performance contributes significantly to trade balance performance, economic growth, and strengthening national



competitiveness. The analysis of competitiveness and productivity reveals that the concept of competitiveness has a very broad meaning and can change according to the approach of thinking and the depth of study, and requires an assessment based on various components. Indonesia's export-import performance also recorded quite strong growth, with exports supported by an increase in both oil and gas and non-oil and gas commodities.

Therefore, efforts to strengthen national competitiveness through the efficiency of the logistics system and increase productivity are urgently needed to maintain international trade performance. In addition, export performance plays an important role in international trade, both exports and imports, because of its significant contribution to the performance of the trade balance, economic growth, and strengthening the country's competitiveness.

LITERATURE REVIEW

International Trade

International trade is an economic activity where each country exchanges goods, services, and capital. The basic principle of international trade is the existence of comparative advantage, which means that each country concentrates on producing the goods or services it produces with a higher level of efficiency than other countries, and obtains additional goods or services through trade.

Absolute Superiority Theory

The theory of absolute superiority put forward by Adam Smith in *The Wealth of Nations* (1776) states that increasing the skill and efficiency of production will increase the wealth of the country. This theory emphasizes free trade without government intervention as well as specialization of production to increase prosperity.

Theory of Comparative Excellence

David Ricardo (1817) developed Adam Smith's theory of absolute superiority by incorporating the concept of free trade. In contrast to the principle of absolute superiority centered on lower real costs, comparative advantage concentrates on the relative price variation between the two elements of production that is the determining factor in the conduct of trade.



Export

Exports have a significant impact on a country's economic growth, because the country exports products produced by intensively utilizing cheap and abundant production factors. Export activities provide benefits for the country, because it can increase national income and accelerate the process of economic development and growth (Boys, 2022).

Coffee

One of the plantation commodities that contributes greatly to Indonesia's export performance is coffee, which has a high export value and is included in the list of top plantation exports. Most of Indonesia's coffee is exported to the United States in the Harmonized System: 0901111000 and HS: 0901119000 groups (Consulate General of the Republic of Indonesia in Chicago, 2020).

RESEARCH METHODS

Research Location

The object of this research includes Indonesia, Brazil, Canada, Italy, Ethiopia, and the United States from 2013 to 2022.

Data Sources and Data

This study uses time series data or secondary time series, the data used includes global export growth, coffee commodity export value, and the total value of commodity exports from Indonesia, Brazil, Canada, Italy, Ethiopia, as well as global data in the 2011-2022 period, which are sourced from BPS, ITC Trademap, UN COMTRADE, the Indonesian Ministry of Agriculture, and the Ministry of Trade.

Data Analysis

This research will use the Revealed Comparative Advantage (RCA) and Constant Market Share (CMS) methods,

A. Revealed Comparative Advantage (RCA)

RCA is a measure of the comparative advantage of a commodity of a country as measured through an analysis of export performance. The RCA/RSCA value is an indication of a country's ability to specialize in a particular area, the greater the RCA and RSCA values, the more it indicates that the country has a specialization advantage in that sector (Nugraheni & Sabilla, 2024)



$$RCA = \frac{X_{ij}/X_j}{X_{iw}/X_w}$$

Where:

- X_{ij} : Export value of commodity i from country j
 X_j : The total value of commodity exports of country j
 X_{iw} : The value of world commodity exports
 X_w : The value of world commodity exports

The results of the RCA score can be summarized as follows:

1. If the RCA value is > 1 , then the country is said to have a comparative advantage in the commodity.
2. If the $RCA < 1$, then the country is said to have no comparative advantage (or less specialized).

RCA values produce disproportionate outputs on both sides, so they must be changed because the asymmetrical values are close to their neutral values. The adjustment index that can be used is the Revealed Symmetric Comparative Advantage (RSCA).

$$RSCA = \frac{RCA - 1}{RCA + 1}$$

If the RSCA value > 0 , it indicates that the exporting country has a comparative advantage in the international market. On the other hand, if the RSCA value < 0 , the exporting country has no comparative advantage in international trade (Syahrudin et al., 2022).

B. Constant Market Share (CMS)

Constant market share is a concept used in market analysis to evaluate the relative performance of a company or product in a particular market over time. CMS model used by Tyres, Philips & Lim (1985) in (Fatimah et al., 2020) are as follows:

$$\text{Standard growth} = \frac{E_t - E_{(t-1)}}{E_{(t-1)}} = g$$

$$\text{Effect of Commodity Composition} = \frac{\sum_i (g_i - g) E_{(t-1)} i}{E_{(t-1)}}$$

$$\text{Market Distribution Effect} = \frac{\sum_i \sum_j (g_{ij} - g_i) E_{(t-1)} ij}{E_{(t-1)}}$$



$$\text{Competitiveness Effect} = \frac{\sum_i \sum_j (E(t)_{ij} - E(t-1)_{ij} - g_{ij} E(t-1))}{E(t-1)}$$

Where:

$$g = \frac{W(t) - W(t-1)}{W(t-1)}$$

$$\text{What} = \frac{W(t)_i - W(t-1)_i}{W(t-1)_i}$$

$$g_{ij} = \frac{W(t)_{ij} - W(t-1)_{ij}}{W(t-1)_{ij}}$$

Information:

E_t = Total export value of commodities i country a year t

$E(t-1)$ = Total export value of commodities i country a in the year preceding t

$E(t-1)_i$ = Value of commodity exports i country a in the year preceding t

E_{ij} = Value of commodity exports i country a to country j

$E_{ij}(t-1)$ = Value of commodity exports i country a to country j in the year preceding t

g = Total value of standard export growth (world)

G_i = Growth value of commodity exports i standard (world)

g_{ij} = Growth value of commodity exports i to country j

$W(t)$ = Total export value of world commodities in year t

$W(t-1)$ = The total export value of world commodities in the year before t

$W(t)_i$ = The total value of world exports of commodities i in year t

$W(t)_{ij}$ = The total value of world exports of commodities i to country j in year t

$W(t-1)_{ij}$ = The total value of world exports of commodities i to country j in the year preceding t

a = Exporting country

j = Export destination country

i = Type of Commodity

t = Year



RESULT**Revealed Comparative Advantage & Revealed Symmetric Comparative Advantage Results****Table 1 RCA Values**

Year	Indonesia	Brazil	Canada	Italy	Ethiopia
2011	5,782	24,078	0,025	0,008	276,306
2012	9,368	16,616	0,021	0,017	256,095
2013	7,015	18,977	0,019	0,012	300,082
2014	8,812	21,720	0,024	0,008	295,815
2015	8,291	23,388	0,036	0,005	303,953
2016	8,283	20,022	0,031	0,005	251,855
2017	7,056	16,612	0,028	0,008	287,949
2018	8,115	15,663	0,034	0,010	276,299
2019	8,304	17,786	0,034	0,013	232,784
2020	6,197	24,579	0,040	0,014	264,224
2021	4,475	21,247	0,042	0,010	287,350
2022	4,347	20,842	0,034	0,011	252,329
Average	7,170	20,127	0,031	0,010	273,753

Source : ITC Trademap (Data processed)

Indonesia's highest RCA value occurred in 2012 at 9,368 with an RSCA of 0.807, while the lowest value was recorded in 2022 at 4,347 with an RSCA of 0.626. The increase in Indonesian coffee exports to the United States in 2012 was caused by the increase in Indonesia's coffee market share, while the share of world coffee exports in the country actually decreased. In 2022, Indonesia's RCA value decreased because Indonesia's coffee market share was less competitive with competitors, although exports increased compared to the previous year.

Brazil's highest RCA score occurred in 2020 at 24,579 with an RSCA of 0.922, while the lowest score was recorded in 2018 at 15,663 with an RSCA of 0.880. The increase in RCA in 2020 was caused by an increase in Brazil's exports and market share as the competitor experienced a decline in coffee imports in the United States. In contrast,



in 2018, Brazil's exports to the United States declined compared to the previous year, leading to a decline in the value of the RCA.

Canada's highest RCA value occurred in 2021 at 0.042 with RSCA -0.920, while the lowest value was recorded in 2013 at 0.019 with RSCA -0.962. The increase in RCA in 2021 was due to a significant increase in Canadian coffee exports to the United States after a period of stagnation. In contrast, in 2013, Canadian exports declined compared to the previous year, resulting in lower RCA values.

Italy's highest RCA value occurred in 2012 at 0.017 with RSCA -0.966, while the lowest value was recorded in 2015 at 0.005 with RSCA -0.991. The increase in RCA in 2012 was due to a significant increase in Italian coffee exports to the United States. In contrast, in 2015, Italy's exports experienced a sharp decline compared to the previous year, leading to a decline in the value of the RCA.

Ethiopia's highest RCA value occurred in 2015 at 303,953 with an RSCA of 0.993, while the lowest value was recorded in 2019 at 232,784 with an RSCA of 0.991. The increase in RCA in 2015 was caused by an increase in Ethiopian coffee exports when competitors declined. In contrast, in 2019, Ethiopia's exports declined while other countries increased. Coffee as the main commodity of Ethiopian exports to the United States keeps the RCA and RSCA values of Ethiopia high.

Table 2 RSCA Values

Year	Indonesia	Brazil	Canada	Italy	Ethiopia
2011	0,705	0,920	-0,951	-0,984	0,993
2012	0,807	0,886	-0,959	-0,966	0,992
2013	0,750	0,900	-0,962	-0,976	0,993
2014	0,796	0,912	-0,953	-0,985	0,993
2015	0,785	0,918	-0,931	-0,991	0,993
2016	0,785	0,905	-0,940	-0,990	0,992
2017	0,752	0,886	-0,946	-0,984	0,993
2018	0,781	0,880	-0,935	-0,981	0,993
2019	0,785	0,894	-0,934	-0,974	0,991
2020	0,722	0,922	-0,923	-0,971	0,992
2021	0,635	0,910	-0,920	-0,979	0,993
2022	0,626	0,908	-0,934	-0,977	0,992
Average	0,744	0,903	-0,941	-0,980	0,993

Source : ITC Trademap (Data processed)



In general, it can be noted that in the period 2011-2022 the RCA and RSCA values of each country fluctuated, but on average the RCA and RSCA values of Indonesia, Brazil, and Ethiopia are competitive because they have RCA values > 1 and RSCA > 0 . Meanwhile, Canada and Italy do not have competitiveness because they have an RCA value of < 1 and RSCA < 0 , this is because the main types of coffee commodities of Canada and Italy exported to the United States are 090121 Roasted coffee (excl. decaffeinated) and not 090111 Coffee (excl. roasted and decaffeinated).

Constant Market Share Results Standard Growth

Table 3 Standard Growth Values

Year	World	Indonesia	Brazil	Canada	Italy	Ethiopia
2011	0,4819	0,2731	0,5429	0,5608	0,3098	0,2359
2012	-0,0819	0,2053	-0,2849	-0,0130	0,0545	0,0510
2013	-0,1341	-0,0604	-0,1991	-0,0748	0,0697	-0,3102
2014	0,1155	-0,1145	0,3168	0,0285	0,0653	0,2935
2015	-0,0477	0,1521	-0,0804	0,1228	-0,0697	-0,0113
2016	-0,0033	-0,1580	-0,1275	0,0550	0,0987	-0,0645
2017	0,0725	0,1771	-0,0499	0,1152	0,0614	0,2930
2018	-0,0593	-0,3111	-0,0525	-0,1842	0,0482	-0,1530
2019	-0,0309	0,0799	0,0417	-0,0055	0,0202	0,0015
2020	0,0382	-0,0693	0,0972	-0,0456	-0,0069	0,0002
2021	0,1837	0,0446	0,1675	0,2307	0,2121	0,4944
2022	0,2766	0,3385	0,4645	0,4462	0,1302	0,2725
Average	0,0676	0,0464	0,0697	0,1030	0,0828	0,0919

Source : ITC Trademap (Data Processed)

The analysis of standard export growth from 2011 to 2022 shows that Indonesia's coffee export growth (0.0464) is below the global average (0.0676) due to a declining export trend, reflecting suboptimal performance. Meanwhile, Brazil recorded export growth of 0.0697, slightly above the global average, although it briefly declined before picking up again. Canada has the highest export growth (0.1030), showing excellent export performance with an upward trend. Italy (0.0828) and Ethiopia (0.0919) also recorded above-average growth, reflecting positive export trends despite fluctuations.



Effects of Commodity Composition**Table 4 Commodity Composition Effect Value**

Year	Indonesia	Brazil	Canada	Italy	Ethiopia
2011	0,023458	0,0234123	0,000907	0,0006379	0,023484
2012	-0,032359	-0,032313	-0,001589	-0,000919	-0,032415
2013	-0,083209	-0,083319	-0,003217	-0,003244	-0,083534
2014	0,031429	0,0315317	0,0009263	0,0008132	0,031633
2015	-0,011893	-0,011973	-0,000478	-0,000229	-0,011992
2016	-0,01741	-0,017498	-0,000806	-0,000391	-0,017519
2017	-0,001896	-0,001906	-0,000067	-0,000046	-0,00191
2018	-0,031805	-0,032027	-0,001024	-0,00074	-0,032083
2019	-0,024437	-0,024644	-0,000963	-0,000561	-0,024677
2020	-0,01643	-0,016597	-0,000696	-0,000412	-0,016591
2021	0,026009	0,0262995	0,0011547	0,0006481	0,026346
2022	0,126676	0,1274184	0,006053	0,0033372	0,127649
Average	-0,000989	-0,000968	0,000016	-0,000092	-0,000967

Source : ITC Tradempa (Data Processed)

An analysis of the effect of the composition of coffee export commodities in Indonesia, Brazil, Canada, Italy, and Ethiopia in the United States market during 2011-2022 shows fluctuations. The highest values occurred in 2022, with Indonesia (0.126676), Brazil (0.1274184), Canada (0.006053), Italy (0.0033372), and Ethiopia (0.127649). In contrast, the lowest values were recorded in 2017, with Indonesia (-0.001896), Brazil (-0.001906), Canada (-0.000067), Italy (-0.000046), and Ethiopia (-0.00191).

The average effect of the composition shows that Indonesia (-0.000989), Brazil (-0.000968), Italy (-0.000092), and Ethiopia (-0.000967) have not been able to meet the demand of the United States market, while only Canada (0.000016) has managed to meet it.

Market Distribution Effects**Table 5 Value of Market Distribution Securities**

Year	Indonesia	Brazil	Canada	Italy	Ethiopia
2011	0,040485	0,038148	0,007069	0,000150	0,019184



2012	-0,009736	-0,008227	-0,001787	-0,000021	-0,003313
2013	0,001735	0,001204	0,000223	0,000006	0,000488
2014	-0,004670	-0,005097	-0,000727	-0,000015	-0,002980
2015	0,013372	0,009276	0,001785	0,000019	0,005336
2016	-0,009428	-0,008520	-0,001787	-0,000010	-0,006250
2017	0,003393	0,002452	0,000425	0,000003	0,001597
2018	-0,002026	-0,001864	-0,000274	-0,000004	-0,001335
2019	0,015143	0,008624	0,001862	0,000023	0,007837
2020	-0,017610	-0,012156	-0,002393	-0,000040	-0,008995
2021	-0,008757	-0,006616	-0,001479	-0,000025	-0,005344
2022	0,019529	0,016553	0,003886	0,000042	0,011572
Average	0,003453	0,002815	0,000567	0,000011	0,001483

Source : ITC Trademap (Data Processed)

An analysis of the effect of the distribution effect of the coffee export markets of Indonesia, Brazil, Canada, Italy, and Ethiopia in the United States during 2011-2022 shows fluctuations. The highest values occurred in 2011 with Indonesia (0.040485), Brazil (0.038148), Canada (0.007069), Italy (0.000150), and Ethiopia (0.019184). In contrast, the lowest scores were recorded in 2018 with Indonesia (-0.002026), Brazil (-0.001864), Canada (-0.000274), Italy (-0.000004), and Ethiopia (-0.00191).

The average market distribution effect shows Indonesia (0.003453), Brazil (0.002815), Canada (0.000567), Italy (0.000011), and Ethiopia (0.001483), indicating that the growth of coffee exports from these countries is in line with the growth of coffee imports from the United States.

Competitive Effects

Table 6 Competitiveness Effect Value

Year	Indonesia	Brazil	Canada	Italy	Ethiopia
2011	-0,029448	-0,000164	0,011859	-0,0006039	-0,062328
2012	0,0943293	-0,058536	-0,00765	0,0006206	0,001815
2013	-0,043156	0,009159	-0,00146	-0,0002225	0,018852
2014	0,054415	0,0443519	0,008314	-0,0001998	0,020826
2015	-0,010641	0,0000779	0,012423	-0,0001544	0,041654
2016	0,0049726	-0,030423	-0,00642	0,0000357	-0,028253



2017	-0,035661	-0,020684	-0,0037	0,0001915	0,047663
2018	0,0194121	-0,01133	0,00483	0,0000931	0,007917
2019	0,0024007	0,0312721	0,000972	0,000208	-0,012376
2020	-0,046876	0,013562	0,002184	0,0000654	0,009298
2021	-0,05219	0,0060233	0,006711	-0,0002388	0,024409
2022	-0,025972	0,0070482	-0,00925	0,000086	-0,045404
Average	-0,005701	-0,000803	0,001568	-0,0000099	0,002006

Source : ITC Trademap (Data Processed)

An analysis of the effect of the competitiveness of Indonesian, Brazilian, Canadian, Italian, and Ethiopian coffee exports in the United States during 2011-2022 shows fluctuations. The highest values were recorded in Indonesia (0.0943293) in 2012, Brazil (0.0443519) in 2014, Canada (0.012423) in 2015, Italy (0.0006206) in 2012, and Ethiopia (0.047663) in 2017. In contrast, the lowest values occurred in Indonesia (-0.010641) in 2015, Brazil (-0.000164) in 2011, Canada (-0.00146) in 2013, Italy (-0.0001544) in 2015, and Ethiopia (-0.012376) in 2019.

The average competitiveness effect shows that Indonesia (-0.005701), Brazil (-0.000803), and Italy (-0.0000099) have weak competitiveness because the value is negative. In contrast, Canada (0.001568) and Ethiopia (0.002006) have better competitiveness because the average score is positive.

Hypothesis Testing

First Hypothesis

The results of data analysis with the Revealed Comparative Advantage (RCA) method improved by the Revealed Symmetric Comparative Advantage (RSCA) method show that Indonesia has an RCA value of more than 1 and an RSCA value of more than 0 every year for the export of Indonesian coffee commodities to the United States (table 4.4 and table 4.5). Thus, the results of the study are in accordance with the statement on the first hypothesis, which states that Indonesian coffee commodities have competitiveness over the coffee exports of Brazil, Canada, Italy, and Ethiopia in the United States. Having $RCA > 1$ and $RSCA > 0$ shows that Indonesia specializes in exporting coffee commodities which is in accordance with the theory of David Ricardo.



Second hypothesis

The results of data analysis using the Constant Market Share (CMS) method show that the export performance of Indonesian coffee products to the United States still tends to be weak. It indicates that Indonesia's average export growth is lower than the average global export growth. In addition, two special elements, namely the effect of commodity composition and the effect of competitiveness, show lower average values in Indonesia. Thus, the findings of the study are not in line with the second hypothesis, which states that the effect of commodity composition, market distribution, and competitiveness affects the performance of Indonesian coffee exports. If export performance increases faster than global growth, it has an impact on a country's economic growth (Hodijah & Angelina, 2021).

Values of Revealed Comparative Advantage and Revealed Symmetric Comparative Advantage in the United States in 2011-2022

The analysis using RCA and RSCA shows that Indonesia has competitiveness and comparative advantages in coffee exports compared to competing countries such as Brazil, Canada, Italy, and Ethiopia. This is evidenced by the $RCA > 1$ and $RSCA > 0$, which confirms Indonesia's comparative advantage.

The $RCA > 1$ score shows that Indonesia specializes in coffee exports, in accordance with David Ricardo's theory which is influenced by the effectiveness of capital, time, and labor. This specialization is reflected in the area of Indonesian coffee plantations which reaches 1.2 million hectares, making it a suitable area for coffee plantations, with the majority of production in the form of Robusta coffee (AEKI-AICE, n.d.).

Indonesia's geographical condition on the Pacific Ring of Fire makes the soil fertile, supporting the growth of extensive coffee plantations. The fertility of this soil also contributes to the distinctive taste of Indonesian coffee, producing special varieties such as Gayo Arabica coffee, Sidikalang Robusta coffee, and Pasuruan Robusta coffee (Ramadhana et al., 2024).

The excellence of Indonesian coffee specialization lies in the effectiveness of labor and time. Coffee plantations, which are mostly managed by people in small groups of farmers, allow the production of coffee in large quantities with a distinctive taste. Inherited expertise as well as traditional methods, such as wet milling, allow for faster and more suitable processing processes for areas with high humidity. In addition, traditional



harvesting methods allow for the selection of mature coffee beans, improving the quality of the harvest (Ashardiono & Trihartono, 2024).

Although Indonesia has a comparative advantage and competitiveness, its competitiveness is still inferior to Brazil and Ethiopia, as can be seen from the lower RCA and RSCA scores. In addition, Indonesia's coffee exports have fluctuated with a downward trend during 2011-2022. The $RCA > 1$ and $RSCA > 0$ values show conformity with the theory of comparative advantage, but do not meet the theory of absolute advantage.

Brazil has a high competitiveness of coffee through the effectiveness of capital, labor, and time, according to David Ricardo's theory. In terms of capital, Brazil invests heavily in modern agricultural infrastructure, including agricultural technology, irrigation systems, and coffee processing, which keeps production costs down. In addition, investment in logistics and distribution has also lowered costs, increasing the efficiency of Brazilian coffee exports (Arantes & Menezes, 2020).

Brazil is improving the competitiveness of coffee through investment in labor and plantation automation. Most coffee plantations in Brazil have implemented a modern system, supported by trained workers with specialized skills. The combination of professional labor and advanced technology improves the quality of Brazilian coffee, drives the process of gourmetization, and strengthens its position in the global market (Silva et al., 2024).

Investments in modern plantation systems in Brazil are increasing the effectiveness of time in coffee cultivation. The maintenance and harvesting process becomes faster, more efficient, and more scheduled. In addition, an integrated post-harvest processing system speeds up production, while an efficient supply chain makes it easier to export Brazilian coffee to the global market (Saraiva et al., 2018).

Ethiopia has an advantage in labor and capital effectiveness, similar to Indonesia, where coffee plantations are managed by a small group of farmers using traditional methods. The plantation system that is still natural and the minimal use of chemicals makes production costs lower. Ethiopia also focuses on the production and export of premium coffee. Meanwhile, the competitiveness of Indonesia's coffee exports can be increased by paying attention to the type of coffee that is in demand in the United States market, where Arabica is preferred over Robusta which is predominantly produced by Indonesia (Siahaan & Affandi, 2022).

Different types of coffee affect consumer interest in the United States, where the higher the demand, the higher the export value and competitiveness of the product. In



addition, the price difference also contributes to competitiveness. For example, in October 2024, the average export price of Brazilian Naturals coffee reached 255.72 US Cents/lb, while Robusta coffee was only 221.91 US Cents/lb. This difference has an impact on the value of exports and competitive position in the global market (ICO, 2024).

Differences in the use of agricultural technology have an impact on the competitiveness and export value of Indonesian coffee. Brazil, which has adopted modern technology, has been able to increase its production and competitiveness, while Indonesia, which still uses a lot of traditional systems, has not reached its maximum potential. Therefore, the massive application of agricultural technology is needed to increase the productivity and competitiveness of Indonesian coffee. In addition, based on Adam Smith's theory of absolute superiority, Indonesia is still unable to control the coffee market share in the United States and loses competition with other countries.

Value of Constant Market Share in the United States 2011-2022

The results of the Constant Market Share (CMS) analysis for the 2011-2022 period show that Indonesia's coffee exports have grown with an average of 0.0464, but are still below the average world export growth of 0.0676. The causative factors include the conversion of plantation land, the reduction of coffee land area, and the lack of investment as carried out by Brazil and Ethiopia. In addition, many coffee plants in Indonesia are old and need rejuvenation to maintain productivity. The lower price of Indonesian Robusta coffee compared to Brazilian Natural and Colombian Milds also has an impact on the export value which is still inferior to competing countries (Amanda & Rosiana, 2023).

The growth of Indonesia's coffee exports in the 2011-2022 period has fluctuated, in line with the downward trend of world coffee exports in 2012-2020. The effect of the composition of Indonesian coffee commodities in the United States market shows an average value of -0.000989, indicating that Indonesia's coffee exports have not been able to fully meet market demand. Meanwhile, Canada, although not a coffee producer, has managed to maintain the stability of export growth with a re-export scheme, selling Arabica coffee that is more in demand by US consumers. In contrast to Indonesia, which exports more Robusta coffee, so the export value is lower.

The market distribution effect shows an average value of 0.003453, signaling an increase in Indonesian coffee exports to the United States during 2011-2022, mainly due to the high import of HS 090111 coffee commodity. However, the effect of competitiveness was negative (-0.005701), indicating a weak contribution to the competitiveness of Indonesian coffee and a decline in exports to the United States

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market. Meanwhile, Canada has the most stable export performance with advantages on capital and time effectiveness, taking advantage of its advanced economic status to import quality coffee, process it into value-added products, and re-export it.

Canada invests in modern technology for the marketing, processing, and distribution of coffee. By leveraging A.I., Canada can identify market trends, adapt to changes, and improve time efficiency in coffee processing and distribution (Maspu, 2023).

As a country that implements a re-export policy, Canada's own coffee export prices are above the export prices of coffee from competing countries, so that although in terms of quantity Canadian coffee is still below other countries, in terms of export value it is able to compete with other countries. The export price of Canadian coffee itself is at US\$ 8.65/KG. (WAMUCI TRANSCRIPT, 2024).

Canada leverages its status as a developed country by investing heavily in processing and distribution technologies, creating capital and time effectiveness that improves the performance of its coffee exports. Indonesia can emulate Brazil's lead by increasing investment in plantation technology and training of farmers to increase capital, manpower, and time effectiveness, as well as encouraging the export of specialty coffee as a strategy to improve export performance.

Meanwhile, the low competitiveness of Italian coffee in the United States market is due to the difference in the type of coffee exported, where Italy exports more processed coffee (090121), while the American market prefers raw coffee (090111). Even so, Italy specializes in capital and time effectiveness, focusing on premium coffee processing technology and re-export strategies, where raw coffee is imported, processed, and then re-exported under the label "Made in Italy," which increases its selling value (Pascucci, 2018).

CONCLUSION

It can be concluded that Indonesian coffee commodities have a comparative advantage and competitiveness in coffee commodities against Brazil, Canada, Italy, and Ethiopia as the main competitor countries in the United States. However, Indonesia's competitiveness is still lower when compared to Brazil and Ethiopia. While the performance of Indonesia's coffee commodity exports to the United States still shows poor results, the average growth is still below the average world export growth



SUGGESTION

Further studies are needed to identify the factors that affect the competitiveness and performance of Indonesian coffee exports in the United States. The government can focus on policies that reduce export barriers, improve market access, and promote specialty coffee to attract U.S. consumers. In addition, the public also needs to deepen their insight into coffee demand trends in the United States, including aspects of quality, type of processing, and consumer preferences. Further research is also needed to explore other factors that can contribute to the improvement of competitiveness and performance of Indonesian coffee exports.

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