Relationship and Elasticity of Indonesia's Tobacco Cigars with Major Competitors in the International Market

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Abstract. Indonesia's tobacco has good potential for exporting to the world market. Cigars are one of the derivative products that can compete with other exporting countries in the world. The trend of Indonesian cigar exports in 2022 has decreased. The study aims to identify the relationship between Indonesian cigars and competing countries in the international market. The research data to be observed uses HS code 240210 by comparing competitor countries between Indonesia, the Dominican Republic, Belgium, Netherlands, Germany, Spain, and Hungary. The analysis method used is the AIDS (Almost Ideal Demand System) model, which will describe the price elasticity of demand, cross-price, and income. The results obtained are based on the income elasticity of Indonesian cigars, including normal goods, with a value of 0.0287. The cross-price elasticity results show that Indonesian cigars tend to compete with Netherlands, Belgium, Spain, and Hungary cigars because they are positive. Meanwhile, Indonesian cigars are related to the Dominican Republic and Germany as complementary goods. Based on the results of the price elasticity of demand, a negative value is obtained, including Indonesian cigars, which means that the demand for Indonesian cigars is inelastic.

Keywords: AIDS model; cigars; demand elasticity; international trade; tobacco

INTRODUCTION

Tobacco is one of the commodities that has herbal properties, one of which is used for wound healing and is also able to treat mental problems in traditional healing practices in Peru (Berlowitz et al.,2023). In addition to economic benefits, tobacco also has health benefits. Tobacco is used as a traditional healing formula that is able to heal external wounds in combination with methanol liquid (Shastri et al., 2024). Tobacco in Indonesia contributes revenue to the state through taxes. An increase in tobacco tax by 45% of the tax level in 2019 can increase economic spending by 84 trillion rupiah, household income by 24.1 trillion rupiah, and employment by 400 thousand jobs (Bella et al., 2024). Tobacco is one of the export commodities that has quite positive potential. This is indicated by the comparative advantage of tobacco commodities in various markets, namely ASEAN and international (Putra et al., 2015; Rahmawati et al., 2019; Wijaya et al., 2023). Indonesia's tobacco production is distributed in many regions. The distribution of tobacco production in Indonesia is as follows.

Table 1. Distribution of tobacco production in Indonesia by province (ton)

Province	Year						Average
	2015	2016	2017	2018	2019*	2020**	
East Java	99,743	42,191	79,442	84,104	84,524	84,997	79,167
West Nusa Tenggara	34,449	39,590	43,971	45,793	46,031	46,077	42,652
Central Java	40,564	27,924	38,341	47,116	47,635	48,359	41,656
West Java	8,471	8,601	8,498	8,229	8,270	8,287	8,393
South Sulawesi	1,535	1,669	1,806	2,160	2,160	2,210	1,923
Aceh	1,919	1,626	2,017	1,734	1,889	1,933	1.853
North Sumatra	765	671	1,473	1,539	1,593	1,643	1,281
Bali	1,024	940	1,213	1,174	1,194	1,208	1,125
Other	5,321	3,517	4,382	3,633	3,954	4,026	4,139
Total	**193,790**	**126,728**	**181,142**	**195,482**	**197,250**	**198,739**	**182,189**

Source: Directorate General of Plantation (2019), *) Provisional Values **) Estimated Values

East Java Province is one of the main centres of tobacco production in Indonesia. Tobacco production in East Java Province reached 84,104 tonnes in 2018 with average production from 2015 to 2020 reaching 79,167 tonnes (Table 1). Tobacco production in East Java Province had experienced a significant decline in 2016, however, it increased again in 2017 to 2020. Other provinces that are tobacco producers are West Nusa Tenggara and Central Java with almost the same average production figure of 42,000 tonnes per year (Table 1). Tobacco production in West Nusa Tenggara province tends to increase every year, as well as tobacco production in Central Java, which has continued to increase from 2016

to 2020 (Table 1). Cigars are tobacco-derived products whose entire product uses real tobacco leaves without any other mixture. Unlike cigarettes that still use a mixture of ingredients other than tobacco leaves, cigars use tobacco leaves from the contents to the outer coating. Cigars are divided into three parts: filler, omblad, and dekblad. The outside part, dekblad, is the part with the highest quality tobacco leaves with a fairly high price when compared to the other parts, namely omblad and filler. Cigars are no less competitive than raw tobacco exports, as shown by the growing quantity of cigar exports in the international market.
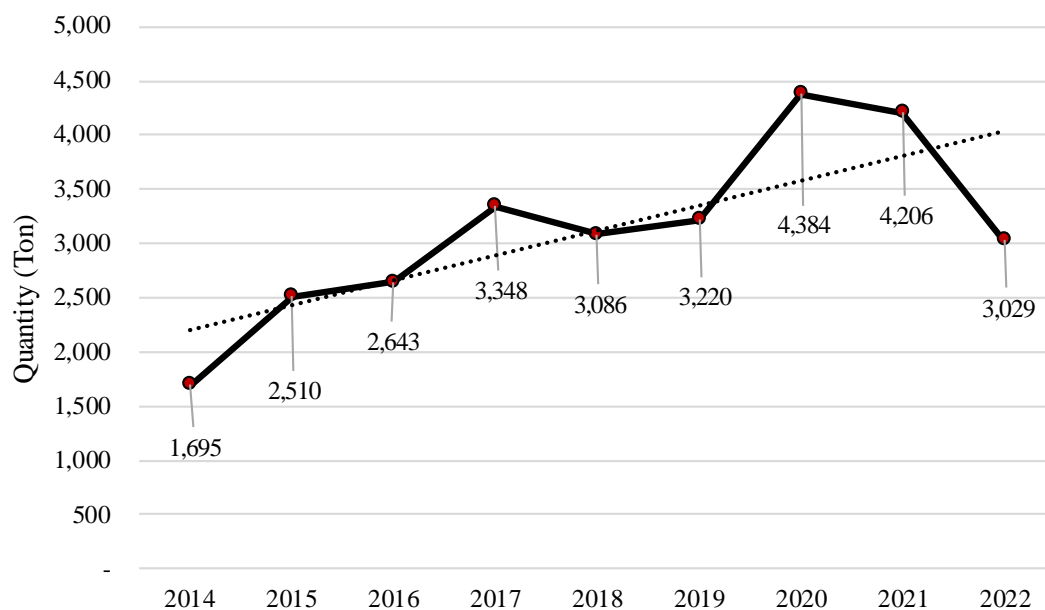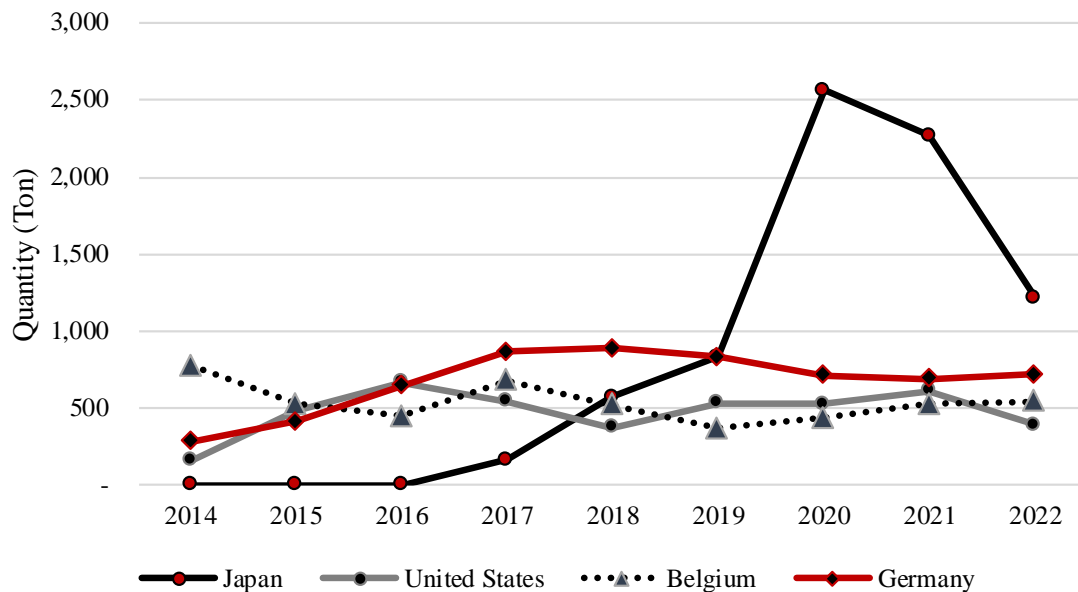

Figure 1. Quantity of Indonesia cigar exports in the international market (International Trade Centre, 2024)

When examining Indonesian cigar exports, there is a positive trend in export quantity (**Figure 1**). Indonesian cigar exports continue to experience an increase in demand; this is reflected in the number of cigar exports in 2011, reaching 2,351 tonnes to 4,384 tonnes in 2020 (**Figure 1**). Indonesia's cigar exports in the last two years, 2021 and 2022, experienced a significant setback. The decline in Indonesian cigar exports is due to the

decline in demand from Japan and the United States as customer countries for Indonesian cigars (International Trade Centre, 2024). The decline in Indonesian cigar exports was also caused by a decrease in tobacco production due to a decrease in tobacco area. The area of tobacco in 2021 reached 219,082 ha and decreased to 204,933 ha in 2022 (Directorate General of Plantation, 2023). Apart from Japan and the United States as the main markets for

Indonesian cigars, Germany and the Netherlands are also export destination

countries for Indonesian cigars.

Figure 2. Main destination countries for Indonesia cigar exports (International Trade Centre, 2024)

Based on **Figure 2**, Japan is the main customer country for Indonesian cigars. Indonesian cigar exports to Japan touched 2,500 tonnes in 2020. It is interesting that Belgium and Germany import cigars from Indonesia while both countries are also major exporters of cigars in the international market. Belgium is the main exporter of cigars in the international market with an export value of 389,479 million USD in 2022, while Germany ranks third with an export value of 270,919 million USD in 2022 (**Figure 3**). The Dominican Republic dominates international cigar exports with an export value in 2022 reaching 1,008,493 billion USD (**Figure 3**). The Dominican Republic's cigar export achievement is thought to be inseparable from the contribution of Indonesia tobacco, because Indonesia also exports raw or unprocessed tobacco to the Dominican Republic. These raw tobacco exports can be reprocessed into cigars with a fairly high tobacco export value of 4,902 million USD with a quantity of 1,311 tonnes in 2022. (International Trade Centre, 2024).

The Dominican Republic is the country with the highest market share in the international cigar market with average of

39.45% in 2022 (**Figure 4**). Belgium is the second country with the largest market share of cigar exports in the international market with average of 15.32% followed by Germany, Spain while Indonesia is still far behind with a market share average of only 2.26% (**Figure 4**). Competition for cigars in the market is quite interesting, as Indonesia actually has good potential. This is based on the upward trend graph (Figure 1), and Indonesia also exports tobacco to supply the tobacco industry in the Dominican Republic, Belgium, Germany, and the Netherlands. (International Trade Centre, 2024).

Export product competition is actually often carried out, for example research conducted by Pinto et al. (2022) which carries one of the agricultural commodities, namely Indonesia cloves. The AIDS (Almost Ideal Demand System) model has been selected as the analytical tool to ascertain the level of expenditure elasticity, own price elasticity, and cross-price elasticity of each commodity exporting country. The results of the cross-elasticity analysis can be used to identify the relationship between cigars produced by exporting countries. A positive sign will indicate a substitution relationship between products or the presence of

competition, whereas a negative sign will reflect a complementary relationship between products or the absence of competition. It is uncommon for research to focus on tobacco-derived products, such as cigars, within their respective international markets. Conversely, the international cigar market is characterised by intense and distinctive competition, making it a compelling subject for further investigation.

The aim of this study is to analyse the income elasticity, cross-price elasticity and price elasticity of demand for cigar products among exporters in the international market. The resulting elasticity analysis will provide insights into the competitive landscape and the relationships between countries exporting cigar products in the international market.
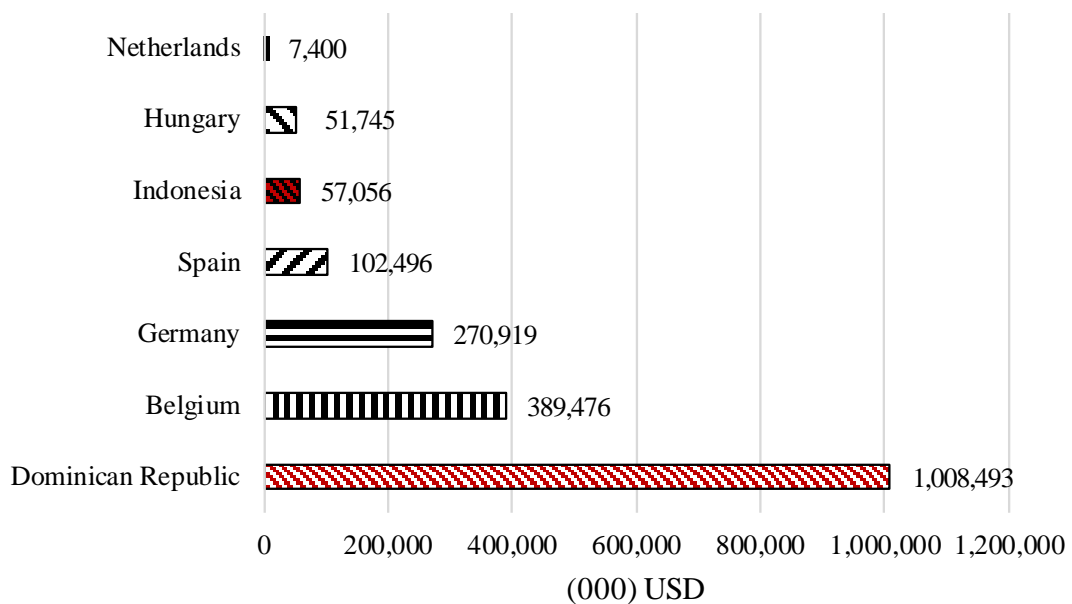
Figure 3. Export value of Indonesia cigars with main competitors in 2022 (International Trade Centre, 2024)
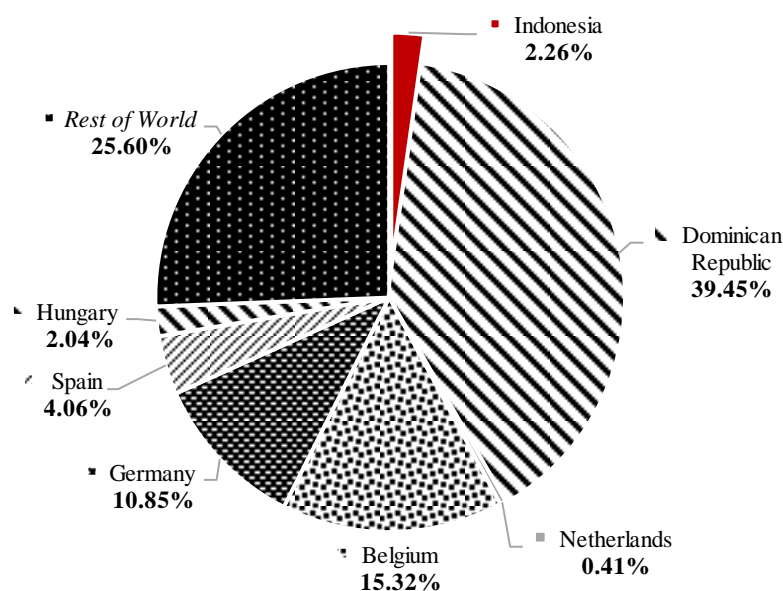
Figure 4. Average market share of cigar exporters in the international market in 2022 (International Trade Centre, 2024)

METHODS

This study utilises secondary data starting from January 2011 to December 2022. Data sources were obtained from the ITC (International Trade Centre) Trade Map with HS (Harmonised System) code 240210 with product specifications (Cigars, cheroots and cigarillos containing tobacco). The comparison countries taken are the main cigar exporting countries in the international market which are also the main competitor countries for Indonesia cigars, namely the Dominican Republic, Belgium, the Netherlands, Germany, Spain and Hungary. The analysis used to help answer the objectives of this research is the AIDS (Almost Ideal Demand System) model analysis. The AIDS model is able to identify the competitive relationship between cigar products from one country to another. Competition can be described by price elasticity of demand, cross-price elasticity, and income elasticity. The use of the AIDS model is often found, for example in research conducted by Fortunika et al. (2021); Manalu et al. (2020) which discusses coffee commodity competition using the AIDS model. Other topics of discussion of plantation commodities such as Indonesia's coconut oil competition with other exporters applying the AIDS model that has been applied by Dewanti et al. (2020). Not only plantation commodities, the AIDS model is also applied to forestry products studied by Natalia et al. (2024). Fishery products researched by Kristiani et al. (2024). Livestock products, one of which is organic milk researched by Li et al. (2018); Bougherara et al. (2022); Lindström, (2022) which identifies the elasticity of organic dairy products in a particular market. Research conducted by Xue et al. (2021); Hameed et al. (2021); Forgenie et al. (2023); Forgenie et al. (2024) who also applied the AIDS model in examining product elasticity. According to Deaton & Muellbauer (1980) the AIDS model has the form of a formula model that can be written as follows:

$$w_i = \alpha_i + \sum_{j=1}^{n} \gamma_{ij} \ln P_j + \beta_i \ln\left(\frac{x}{p^*}\right) \quad ....(1)$$

Description:
W_i = *Share of* country i's cigar exports in the world market
P= Exporter's country of origin price
X= Total world import value
P^* = Geometric price index stone = $\Sigma wi.pi$

The above formula is applied to eight cigar-exporting countries in the international market, namely Indonesia, Dominican Republic, Belgium, Netherlands, Germany, Spain, and Hungary. The dependent variable applied to this equation is the market share of the eight cigar exporting countries in the international market with the independent variable being the export price of cigars from Indonesia, Dominican Republic, Belgium, Netherlands, Germany, Spain, Hungary, and the Rest of World (ROW). The following is the form of seven equations for each cigar-exporting country:

$$w_{in} = \alpha_1 + \gamma_1 \text{lnpin} + \gamma_2 \text{lnprd} + \gamma_3 \text{lnpbl} + \gamma_4 \text{lnpjr} + \gamma_5 \text{lnpbn} + \gamma_6 \text{lnpsp} + \gamma_7 \text{lnphr} + \gamma_8 \text{lnprw} + \beta_1 \ln\tfrac{x}{p^*} \quad ....(2)$$

$$w_{rd} = \alpha_2 + \gamma_9 \text{lnpin} + \gamma_{10} \text{lnprd} + \gamma_{11} \text{lnpbl} + \gamma_{12} \text{lnpjr} + \gamma_{13} \text{lnpbn} + \gamma_{14} \text{lnpsp} + \gamma_{15} \text{lnphr} + \gamma_{16} \text{lnprw} + \beta_2 \ln\tfrac{x}{p^*} \quad ....(3)$$

$$w_{bl} = \alpha_3 + \gamma_{17} \text{lnpin} + \gamma_{18} \text{lnprd} + \gamma_{19} \text{lnpbl} + \gamma_{20} \text{lnpjr} + \gamma_{21} \text{lnpbn} + \gamma_{22} \text{lnpsp} + \gamma_{23} \text{lnphr} + \gamma_{24} \text{lnprw} + \beta_3 \ln\tfrac{x}{p^*} \quad ....(4)$$

$$w_{jr} = \alpha_4 + \gamma_{25} \text{lnpin} + \gamma_{26} \text{lnprd} + \gamma_{27} \text{lnpbl} + \gamma_{28} \text{lnpjr} + \gamma_{29} \text{lnpbn} + \gamma_{30} \text{lnpsp} + \gamma_{31} \text{lnphr} + \gamma_{32} \text{lnprw} + \beta_4 \ln\tfrac{x}{p^*} \quad ....(5)$$

$$w_{bn} = \alpha_5 + \gamma_{33} \text{lnpin} + \gamma_{34} \text{lnprd} + \gamma_{35} \text{lnpbl} + \gamma_{36} \text{lnpjr} + \gamma_{37} \text{lnpbn} + \gamma_{38} \text{lnpsp} + \gamma_{39} \text{lnphr} + \gamma_{40} \text{lnprw} + \beta_5 \ln\tfrac{x}{p^*} \quad ......(6)$$

$$w_{sp} = \alpha_6 + \gamma_{41} \text{lnpin} + \gamma_{42} \text{lnprd} + \gamma_{43} \text{lnpbl} + \gamma_{44} \text{lnpjr} + \gamma_{45} \text{lnpbn} + \gamma_{46} \text{lnpsp} + \gamma_{47} \text{lnphr} + \gamma_{48} \text{lnprw} + \beta_6 \ln\tfrac{x}{p^*} \quad ......(7)$$

$$w_{hr} = \alpha_7 + \gamma_{49} \text{lnpin} + \gamma_{50} \text{lnprd} + \gamma_{51} \text{lnpbl} + \gamma_{52} \text{lnpjr} + \gamma_{53} \text{lnpbn} + \gamma_{54} \text{lnpsp} + \gamma_{55} \text{lnphr} + \gamma_{56} \text{lnprw} + \beta_7 \ln\tfrac{x}{p^*} \quad ......(8)$$

$$w_{rw} = \alpha_8 + \gamma_{57} \text{lnpin} + \gamma_{58} \text{lnprd} + \gamma_{59} \text{lnpbl} + \gamma_{60} \text{lnpjr} + \gamma_{61} \text{lnpbn} + \gamma_{62} \text{lnpsp} + \gamma_{63} \text{lnphr} + \gamma_{64} \text{lnprw} + \beta_8 \ln\tfrac{x}{p^*} \quad .....(9)$$

Description:
W_{in} = Indonesia cigar export share in the international market

W_{rd} = Dominican Republic cigar export share in International market
W_{bl} = Belgium cigar export share in the International market
W_{bn} = Netherlands cigar export share in the International market
W_{jr} = Germany cigar export share in the International market
W_{sp} = Spain cigar export share in the International market
W_{hr} = Hungary cigar export share in the International market
W_{rw} = Rest of world cigar export share in International markets
P_{in} = Export price of Indonesia cigars on the international market
P_{rd} = Export price of Dominican Republic cigars on the International market
P_{bl} = Export price of Belgium cigars on the international market
P_{bn} = Export price of Netherlands cigars on the international market
P_{jr} = Export price of Germany cigars on the international market
P_{sp} = Export price of Spain cigars on the International market
P_{hr} = Export price of Hungary cigars on the international market
P_{rw} = Export price of rest of world cigars on the international market

The AIDS model was applied by Deaton & Muellbauer (1980) to identify demand. The role of price is the link between demand and supply. The AIDS model has the advantage that the model applied is a first order approximation in each demand. The AIDS model equation must fulfill three conditions, namely homogeneity, symmetry, and adding up in accordance with demand theory. The following is the form of the homogeneity, symmetry, and adding up formulas:

a) Homogeneity

The Hicksian demand function is zero-degree homogeneous with respect to the price of the good or service. While the Marshallian demand function will be homogeneous at zero degree to prices and expenditure. The above shows the Marshallian demand function, which is the demand for goods or services will not change if there is a change in prices and expenditure proportionally (Deaton & Muellbauer, 1980).

$$\sum_{i=1}^{n} \gamma_{ij} = 0 \ ....(10)$$

b) Symmetry

Symmetry is a property used in testing whether consumers are consistent in determining their preferences for the goods and services they choose (Deaton & Muellbauer, 1980). The following is the mathematical form of symmetry.

$$\gamma_{ij} = \gamma_{ji} \ ....(11)$$

c) Adding Up

The total expenditure in consuming goods and services is the total demand value (Marshallian demand function and Hicksian demand function) (Deaton & Muellbauer, 1980). Here is the mathematical form of Adding up.

$$\sum_{i=1}^{n} \alpha_i = 1, \sum_{i=1}^{n} \gamma_{ij} = 0, \sum_{i=1}^{n} \beta_i = 0$$
$$.........(12)$$

The results of the AIDS model in the form of SUR (Seemingly Unrelated Regression) regression were processed again by entering the elasticity calculation formula. According to Baye & Prince (2022); Harianto et al. (2022), elasticity is divided into three, namely cross-price elasticity (uncompensated), which will reflect the presence or absence of competition between cigar products, price elasticity of demand (compensated), and income elasticity (expenditure). The following are the formulas for the three elasticities:

a) Price elasticity of demand (Uncompensated)

$$e_{ij} = -\delta + \frac{\gamma_{ij}}{w_i} - \beta_i \left(\frac{w_j}{w_i}\right) ....(13)$$

b) Cross price elasticity (Compensated)

$$e^*_{ij} = -\delta_{ij} + \frac{\gamma_{ij}}{w_i} - w_j ....(14)$$

c) Income elasticity (Expenditure)

$$\eta_i = 1 + \frac{\beta_i}{w_i} ....(15)$$

Description:
γ_{ij} = cigar price parameter in market j
β_i = total value of cigar exports in market j
W_i = share of cigars country i
W_j = share of cigars country j
δ is the kronecker delta which is δ=1 for i=j and δ=0 if i≠j

RESULTS AND DISCUSSION

Cigars are processed products from tobacco commodities that have high added value. Unlike cigarettes, which are only chopped tobacco wrapped in paper, cigars have a high added value because all cigar products use full tobacco leaves with high quality. The type of tobacco used is different, cigarettes use VO (*Voor-Oogst*) type tobacco while cigars use NO (*Na-Oohst*) type tobacco which has flexible characteristics so that it can be processed into cigars. Cigars consist of *filler* quality

tobacco*,* inner dressing quality tobacco known as *omblad,* and outer dressing quality tobacco or *dekblad. Dekblad* is required to be of good quality as it determines the flavour of the cigar and is responsible for wrapping the entire cigar, which means it must have good flexibility. This also influences the price of *dekblad* quality tobacco to be more expensive when compared to the price of *omblad* and *filler* quality tobacco. Cigars tend to be consumed by foreign consumers compared to domestic consumers due to their high price. Indonesias tend to favour cheaper and more practical cigarettes. This is why cigars are often exported rather than consumed domestically. Indonesia is one of the exporters of cigars in the international market. Indonesia cigars do not play alone, however, there are other countries that compete with cigars in the international market. The following is the competition of Indonesia cigars with major exporters in the international market

Table 2. Coefficients and P-Values of Indonesia cigars and exporting countries in international markets

Equation	R-Sq	P-Value
Qina	0.4283	0.0000
Qrep	0.3754	0.0000
Qbel	0.2204	0.0000
Qblg	0.4296	0.0000
Qger	0.2817	0.0000
Qspa	0.1315	0.0007
Qhun	0.1065	0.0000

Source: Secondary data processed (2024)

The data processing results of the Seemingly Unrelated Regression analysis illustrate that the p-values of the seven major exporters in the international market, namely Indonesia, the Dominican Republic, the Netherlands, Belgium, Germany, Spain and Hungary, are less than 0.05 and even less than 0.01. This situation identifies that the p-value is significant at the 5% and even 1% level, which states that the equation of the seven cigar exporting countries in the international market has a significant effect.

Income Elasticity of Indonesian and Competitor Countries Cigars

Based on the data processing results of the AIDS model, it shows that the income elasticity of cigar exporters, namely Indonesia, Dominican Republic, Netherlands, Belgium, Germany, Spain and Hungary in the international market is above 0 or positive (**Table 3**). This value indicates that cigar products from the seven countries are normal goods (Baye & Prince, 2022; Harianto et al., 2022). This identifies that, if there is an increase in income for consumers around the world, it will increase the

demand for cigar products in the seven exporters. The results of the income elasticity of the seven cigar exporters in the international market show a number less than one, an increase in income will increase

spending on cigars by a smaller %age than the %age increase in income. If consumer income decreases, expenditure on cigars falls more slowly than income.

Table 3. Income elasticity values of Indonesia cigars and exporting countries in the international market

Country	Income Elasticity
Indonesia	0.0287
Dominican Republic	0.3331
Netherlands	0.1023
Belgium	0.1622
Germany	0.0946
Spain	0.0358
Hungary	0.0166

Source: Secondary data processed (2024)

The income elasticity results in **Table 3** show that the income elasticity value of Indonesian cigars is 0.0287 (**Table 3**). This situation identifies that if there is a 10% increase in consumer income (*ceteris paribus*), it will increase demand by 0.28% for Indonesia cigars. Interestingly, the income elasticity of Dominican Republic cigars and Belgium cigars is quite high compared to other cigars, including Indonesian cigars. The income elasticity of Dominican Republic cigars is 0.3331 while the income elasticity of Belgium cigars is 0.1622 (**Table 3**). If there is a 10% increase in the income of world cigar consumers (*ceteris paribus*), it will increase the demand for Dominican Republic cigars by 3.33% and Belgium cigars by 1.62%. World cigar consumers tend to purchase Dominican Republic and Belgium cigar products when they experience an increase in income. This situation also indicates that Dominican Republic and Belgian cigars are specialised compared to other cigars. Because when consumers experience an increase in income, consumers are more interested in buying cigars from the Dominican Republic and Belgium.

The cross-price elasticity of Indonesian and Competitor Country cigars

The results of the compensated cross-price elasticity calculation can determine the relationship between the products of each cigar exporter in the international market. This elasticity can also identify how much demand will increase or decrease due to changes in other countries' products. The relationship between Indonesia cigars and Dominican Republic cigars and German cigars shows a complementary relationship. This relationship is indicated by cross-price elasticity values that are less than 0 or negative (Baye & Prince, 2022; Harianto et al., 2022). This indicates that there is no competition between Indonesian cigar products and Dominican Republic cigars and German cigars. Indonesia tends to compete with Netherlands, Belgium, Spain, and Hungary cigars, which, based on the cross-elasticity results, show results above 0 or positive (Baye & Prince, 2022; Harianto et al.*,* 2022). Indonesian cigar companies should more intensely examine price shifts from the Netherlands, Belgium, Spain, and Hungary cigar products because they compete directly and have a substitution relationship.

Table 4. Cross-Price Elasticity Values of Indonesian cigars and exporting countries in the international market.

Country	Indonesia	Dominican Republic	Netherlands	Belgium	Germany	Spain	Hungary
Indonesia	-	-0.1522	0.4180	0.1449	-0.9231	0.0636	0.0484
Dominican Republic	-0.0131	-	-0.2127	-00752	0.1053	0.0441	0.0123
Netherlands	0.1174	1.6965	-	-0.4396	-0.0216	0.1754	-0.0276
Belgium	0.0257	-0.0463	-0.2772	-	0.3192	0.0148	0.0007
Germany	-0.2805	0.2074	-0.0234	0.5477	-	0.0676	-0.1139
Spain	0.0511	0.7324	0.5015	0.0671	0.1788	-	-0.0369
Hungary	0.0839	0.0605	-0.1704	0.0066	-0.6497	-0.0796	-

Source: Secondary data processed (2024)

The cross-price elasticity of Indonesian cigars with the Dominican Republic shows a value of -0.1522 (**Table 4**). If interpreted, if there is an increase in the price of Dominican Republic cigars by 10% (*ceteris paribus*), there will be a decrease in demand for Indonesian cigars by 1.52%. The German cigar relationship also has similarities that show a negative value of -0.9231 (**Table 4**). If there is an increase in the price of German cigars by 10% (ceteris paribus), there will be a decrease in demand for Indonesian cigars by 9.23%. Indonesia cigars compete quite closely with Netherlands cigars. This is characterized by a larger cross-elasticity value than other competing countries, which is 0.4180 (Table 4). Price shifts that occur in Netherlands cigars will have a more pronounced impact on Indonesia cigars when compared to other competing cigars, namely Belgium, Spain, and Hungary. If there is a 10% increase in the price of Netherlands cigars (*ceteris paribus*), there will be a 4.18 % increase in demand for Indonesian cigars. Conversely, if there is a 10% decrease in the price of Netherlands cigars (*ceteris paribus*), there will be a 4.18% decrease in demand for Indonesian cigars.

Price Elasticity of Demand for Indonesian and Competitor Country Cigars

The results of the AIDS model analysis and processed by the price elasticity of demand or Uncompensated formula, show that all values of the elasticity of demand for cigar products of the seven major exporters in the international market are negative. The negative value indicates that if there is an increase in the price of cigar products from the seven main exporters, it will reduce the demand for cigar products. This situation is in accordance with demand theory, which states that an increase in price will reduce the amount of demand, or it can be said that the relationship between price and amount of demand is inversely proportional (Baye & Prince, 2022; Harianto et al., 2022). The price elasticity of demand for Indonesia, the Dominican Republic, the Netherlands, Belgium, Germany, and Hungary cigars is less than one, which identifies the demand is inelastic. Inelastic demand identifies that the product is relatively unresponsive to change. In contrast to the others, the elasticity of Spain cigars shows a number greater than one. This identifies the product as being in the elastic category. Products with elastic demand tend to be responsive to price changes. Indonesian cigars should be able to take this opportunity by playing the price. Indonesian cigar manufacturers can control the price of their cigars exported to the International market as demand tends to be unresponsive to price. Indonesian cigar consumers can be identified as not thinking about price even if there is a price increase. Consumers tend to keep buying or consuming Indonesian cigars. Goods that have inelastic values tend to have superiority among consumers, whether the superiority of quality, taste, or needs that cannot be replaced.

Table 5. Price Elasticity of Demand for cigars of indonesia and exporting countries in international markets

Country	Price Elasticity of Demand
Indonesia	-0.9619
Dominican Republic	-0.9170
Netherlands	-0.8222
Belgium	-0.8547
Germany	-0.9981
Spain	-1.0072
Hungary	-0.9740

Source: Secondary data processed (2024)

The price elasticity of demand for Indonesian cigars is -0.9619 (**Table 5**). If there is a 10% increase in price (*ceteris paribus*), it will decrease demand by 9.61% . The elasticity of demand for Netherlands cigars is the lowest compared to the other cigars with a value of -0.8222 (**Table 5**). If there is a 10% increase in the price of Netherlands cigars (*ceteris paribus*), it will reduce demand by 8.22% for Netherlands cigars. Belgian cigars also have a more inelastic demand elasticity value than Indonesian cigars, with a value of -0.8547 (**Table 5**). A 10% increase in Belgian cigars (*ceteris paribus*) would decrease demand by 8.54% for Belgian cigars. The Netherlands and Belgium are the cigar products with the lowest demand elasticity values compared to other countries. This is an advantage for both countries to implement a strategy of increasing prices even higher, because consumers tend to continue to consume cigars from both countries due to the unresponsiveness of the decline in consumer demand to cigar price increases. Belgium cigars can be said to be special cigars compared to other cigars because in addition to a high-income elasticity value compared to the income elasticity of other cigars (**Table 3**). Belgian cigars also have low demand elasticity values or are not responsive to price increases. This situation identifies that Belgian cigars have a special position among world cigar consumers. In contrast to some other cigar exporters, Spanish cigars are characterised as being more responsive to price changes. Changes in demand for Spanish cigars will be greater than changes in price. The elasticity of demand for Spanish cigars is -1.0072 (**Table 5**). If there is a 10% increase in price (*ceteris paribus*), it will decrease the demand for Spanish cigars by 10.07%.

CONCLUSION

Indonesian cigars are a regular item in the international market as are cigars from other exporters. Indonesian cigars tend to compete with Netherlands, Belgium, Spain, and Hungary's cigars. The relationship between Indonesian cigars and the Dominican Republic and Germany is only complementary. This situation identifies the absence of competition for these products. Demand for Indonesian cigars tends to be inelastic. This is similar to other exporters, namely Dominican Republic, Netherlands, Belgium, Germany, and Hungary cigars, which fall into the inelastic category. Cigar producers in Indonesia must be more courageous in controlling prices in the international market while still examining substitute products, namely Netherlands, Belgium, Spain and Hungary cigars. Indonesia cigars should be more aware of Belgian cigars because in addition to having a substitution relationship that examines competition, Belgium cigars have a special position among world cigar consumers. To enhance their competitive standing in the global market, Indonesian cigar manufacturers must endeavor to elevate the quality and production of their cigars to a standard that is commensurate with the superior benchmarks established by their competitors in the Dominican Republic and Germany. Improvements to quality can be achieved through a number of avenues. One

such avenue is the application of the International Association of Cigar Sommeliers certification, which would produce high-quality cigars. Another avenue is the collaboration with the Meteorology, Climatology and Geophysics Agency to ascertain the optimal weather conditions for planting, intending to increase production. Additionally, there is scope for innovation in tobacco plants that are resistant to climate change and pests, which would enable the production of cigars to be sustained amidst uncertain climate conditions.

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