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Export Competitiveness of Malaysian Cosmetics in ASEAN Markets and Its Contributing Factors

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Abstract

This study examines Malaysian cosmetics export competitiveness in ASEAN markets by employing revealed comparative advantage (RCA), revealed symmetric comparative advantage (RSCA), and normalised revealed comparative advantage (NRCA) to measure export competitiveness and as dependent variables to examine competitiveness factors. Independent factors include exchange rate, trade liberalisation, inflation, gross domestic product (GDP), and money supply. The export competitiveness indexes for Malaysian cosmetics reflect a competitiveness disadvantage in ASEAN markets. The Autoregressive Distributed Lag (ARDL) result shows that GDP has a significant negative effect on export competitiveness in both the short and long run. In the long run, inflation has a significant negative impact on export competitiveness. Trade liberalisation and money supply negatively impact export competitiveness in the short run. The Export Similarity Index (ESI) indicates that ASEAN countries have low competition. This study aims to suggest the encouragement of local product consumption and buying within the ASEAN countries because these nations do not compete with each other as their main competitors come from other regions

Keywords: cosmetics, ARDL, export competitiveness, ESI

1. Introduction

A cosmetic product is "any substance or preparation intended to be placed in contact with various external parts of the human body (epidermis, hair system, nails, lips, and external genital organs) or with teeth and the mucous membranes of the oral cavity, with a view exclusively or mainly to cleaning them, perfuming them, changing their appearance and/or correcting body odours and/or protecting them or keeping them in good condition" (National Pharmaceutical Regulatory Agency, 2021).

Based on the data from Trademap for the last ten years, from 2009 to 2019, the HS3304 (beauty or make-up preparations and preparations for the care of the skin, including sunscreen or suntan preparations (excluding medicaments); manicure or pedicure preparations) is the highest contribution to the export and import cosmetic products in Malaysia compared to the other categories. The export and import of HS3304 in 2009 were 35% and 40%, respectively, compared to the other categories (Trademap, 2021). This position is maintained, and HS3304 still has the highest contribution to export and import with 47% and 50%, respectively, in 2019, which shows an increase of 12% in exports and 10% in import. This study focuses only on cosmetic products in HS3304, and the subcategories under HS3304 are as follows:

i. 330499: Beauty or make-up preparations and preparations for the care of the skin (other than medicaments), including sunscreen or suntan preparations (excluding medicaments, lip and eye make-up preparations, manicure or pedicure preparations, and make-up or skincare powders, incl. baby powders);

ii. 330410: Lip make-up preparations;

iii. 330420: Eye make-up preparations;

iv. 330491: Make-up or skincare powders, including baby powders, whether

or not compressed (excluding medicaments); and

v. 330430: Manicure or pedicure preparations.

The Association of Southeast Asian Nations (ASEAN) was established on 8 August 1967. There are ten Member States of ASEAN. Malaysia, Thailand, Indonesia, Philippines, Singapore, Brunei, Vietnam, Lao PDR, Myanmar, and Cambodia. One of the initiatives to boost export among ASEAN members is the Free Trade Area (AFTA) agreement, established in 1992 to encourage economic cooperation among ASEAN members. The fundamental goal of this agreement under the ASEAN Common Effective Preferential Tariff (CEPT) Scheme is the reduction of tariffs. The commitment of the ASEAN to promoting liberalisation in the cosmetics industry through an agreement called for the ASEAN Harmonized Cosmetic Regulatory System. This agreement was agreed upon at the 35th ASEAN Economic Ministers Meeting on 2 September 2003. This agreement aims to enhance cooperation among the Member States in ensuring the safety and quality of all cosmetic products marketed in ASEAN and eliminate restrictions on their trade.

The total export of cosmetic products by Malaysia in ASEAN countries was US$ 83,582 million and 55.38% of the total export of cosmetic products in 2019. Singapore, Thailand, and Indonesia are the primary importers and exporters of Malaysian cosmetics in the ASEAN market. Malaysia's top three ASEAN export destinations for cosmetics are Singapore (valued at US$ 42,730 million), Indonesia (valued at US$ 14,019 million), and Thailand (valued at US$ 13,068 million).

Cosmetics products have shown a promising trend in the demand and supply of cosmetic products in Malaysia. However, it is not enough to ensure the cosmetic industry in Malaysia grows and sustains itself as one of the essential

Malaysian trade components. Based on the 2009 to 2019 data, the average export growth of the cosmetic industry in ASEAN markets is found to be less than the import growth, suggesting that during these ten years, Malaysian export performance does not outshine the import and may not be as competitive as the import. According to the theory of comparative advantage, the Ricardian theory, Malaysia does not seem to achieve a comparative advantage. This inconsistent finding needs further research through this study on the export competitiveness of Malaysian cosmetic products in the ASEAN market and also the factors affecting the competitiveness. As a member of ASEAN, this study also investigates Malaysia's export competition with the selected top exporters in ASEAN countries other than Malaysia to prove the success of the benefits highlighted above.

Additionally, the findings of the study could be advantageous to the authorities and industry to plan their strategies to grow in the current performing markets and explore potential future markets. Katsikeas et al. (1996) stated that the export behaviour and performance of current exporters is an area of legitimate interest, and such studies can be of importance to both public and private sector administrators concerned with future export development and success.

Motivated by the facts stated above, this study attempts to measure the export competitiveness of Malaysian cosmetic products, examine the factors affecting the export competitiveness of Malaysian cosmetic products in ASEAN markets, and investigate the competition among selected ASEAN countries. This study would enable industry players to understand the competitiveness of Malaysian cosmetics in ASEAN markets better to keep them sustained and growing in this industry. Furthermore, it would help the policymakers to analyse further the potential of this industry and markets to enhance economic growth in Malaysia as well as in the other ASEAN countries.

2. Literature Review

Krugman et al. (2018) have described two basic theories of trade. The first is the Ricardian theory proposed by David Ricardo, which explains that a country should export goods with high productivity. It is called a comparative advantage when the opportunity cost of producing a good is lower than in other countries. Secondly, the Heckscher-Ohlin theory, also known as the factor proportions theory, is influenced by the interaction between the country's resources and production technology. This theory explains the relative abundance of factors of production. If a home country has capital abundance, the country will produce technologically-based products compared to the other country, which may have a labour abundance that needs to produce labour-intensive products.

There are three export competitiveness indexes (RCA, RSCA, and NRCA) used in this study as dependent variables. Revealed Comparative Advantage (RCA), introduced by Balassa in 1977, is widely used in empirical research to determine the export competitiveness of products from one country to another country. Straker (2015), Utkulu and Seymen (2004), Esposto and Pereyra (2013), Batra and Khan (2005), Chiquiar et al. (2007), and Abbas (2017) applied RCA in their studies. Revealed Symmetric Comparative Advantage (RSCA) and Normalised Revealed Comparative Advantage (NRCA), derived from RCA, claim to be better by providing a proper indication of export advantage. Ervani et al. (2019) measured the comparative advantage of East Asian countries by using Revealed Symmetric Comparative Advantage (RSCA); Mahajan (2019) and Wongpit and Inthakesone (2017) applied NRCA to measure the competitiveness and export performance of Indian pharmaceutical products and Lao products. To examine the competition of exports between two countries (Malaysia and the selected ASEAN country), this study has referred to Erlat and Ekmen (2009) using the Export Similarity Index (ESI).

The independent variables used in this study are real effective exchange rate (REER), trade liberalisation (TL), inflation (INF), gross domestic product (GDP), and money supply (MS). The exchange rate permits calculating the export price in a foreign currency. EL (2018) and Waliullah et al. (2010) employed Autoregressive Distributed Lag (ARDL) to examine the relationship between the real exchange rate (RER) with the export performance in Cambodia and the trade balance in Pakistan. The results of these studies showed that the real exchange rate has a negative relationship with export performance and the trade balance. Basilgan and Akman (2019) investigated the effect of the real effective exchange rate (REER) on export performance in Turkey by using the ARDL bound testing approach from 2005–2018. The finding of this study showed REER had a negative relationship with export performance in the short and long run.

In contrast, some studies showed a positive relationship between export and exchange rate. For example, Ramli et al. (2011) conducted a study examining the exchange rate of Malaysian exports using the OLS method from 1970 to 2006. The findings of this study for the relationship between the exchange rate and export was positive and significant at 1%. Khaldun et al. (2018) analysed the characteristics of Indonesian seaweed commodities by using the OLS method during the period from 2006 to 2016. This study employed a currency exchange rate and concluded that export had a positive association with the exchange rate. Waliullah et al. (2010) employed Autoregressive Distributed Lag (ARDL) to examine the relationship between the real exchange rate (RER) with the export performance in Cambodia and the trade balance in Pakistan. According to Krugman et al. (2018), when a country's currency depreciates, its exports become cheaper for foreigners, while imports from abroad become more expensive for domestic consumers. The effects of admiration are contrary. Foreigners pay more

for domestic products, but domestic customers pay less for imports.

Trade liberalisation (TL) supposedly should have a positive impact on trade liberalisation. EL (2018) and Khaldun et al. (2018) stated that trade liberalisation positively impacted exports. Fan et al. (2019) examine trade liberalisation and export performance by using changes in the tariff on imported intermediate goods and final goods. The results indicate a strong negative result with export performance. AFTA is the most important trade liberalisation policy in ASEAN, and Samavong (2019) found a positive significance of trade creation and trade diversion as the impact of AFTA on ASEAN countries.

Inflation (INF) would impact the price of domestic goods and indirectly would have consequences on the exports of that country. The empirical studies by EL (2018) and Khaldun et al. (2018) showed that inflation had a negative relationship with exports. EL highlighted the strong negative effect of the inflation rate in the short- and long-run relationship.

Gross domestic product (GDP) refers to the country's economic growth. The majority of the previous studies found that GDP had a positive relationship with export. For example, Jawaid et al. (2016) examined the impact of GDP on export performance in Pakistan from the period 1974–2012 by using ARDL and showed that the coefficient of GDP was significantly positive in short- and long-run relationships. The same finding was also found by Waliullah et al. (2010) and Khaldun et al. (2018). Despite the studies showing a positive correlation between GDP and export, a study by Etale and Etale (2016) studied the relationship between export and economic growth from 1980–2013 in Malaysia and showed otherwise. The result based on the ordinary least square (OLS) GDP had a negative relationship with export.

The money supply (MS) indirectly affects export competitiveness through

the appreciation or depreciation of the home country's exchange rate. According to Waliullah et al. (2010), money supply had a negative impact on the trade balance in both the short and long run; hence, a decreased money supply would improve the trade balance. The negative outcome of money supply variables is consistent with the assumption that a rise in domestic income will increase the demand for money and exports, hence improving the trade balance. Krugman et al. (2018) also discovered that an increase in the money supply would cause the home country's currency to depreciate. This effect will cause the price of domestic products to be relatively lower and increase export competitiveness.

3. Methodology

3.1 Data

There are two steps in analysing the data. Firstly, this study retrieves the trade data published by the United Nations Commodity Trade Statistics Database (UN-COMTRADE) on the Harmonization Code HS3304 from 1989 to 2020. These data are then computed into export competitiveness indexes, as discussed in Section 3.2. After that, the indexes are applied as the dependent variables to find out what factors affect them.

3.2 Export Competitiveness Indexes

The study applied three dependent variables to measure export competitiveness indexes computed from the raw data accessed through UN-COMTRADE. All these variables will be the main models for this study. RCA is the country's share of world export of commodities divided by its share of total world imports:

$$RCAij = (Xij/Xwj)\,/(X/Xw) \quad (1)$$

Where *Xij* is the Malaysian export of cosmetics, *Xwj* is the ASEAN export of cosmetics, *Xi* is the total export of Malaysia, and *Xw* is the total ASEAN exports. The value of RCA greater than 1 is considered to have a comparative advantage, whereas those with an RCA less than 1 do not.

RSCA is derived from RCA. The emergence of RSCA is when there is criticism of the RCA method. The 'pure' RCA is basically not comparable on both sides of unity, as the index ranges from 0 to 1 if a country is said not to be specialised in a given sector, while the value of the index ranges from 1 to infinity if a country is said to be specialised (Laursen, 1998). The formula of RSCA is expressed as below:

$$RSCA = (RCA - 1)/(RCA + 1) \quad (2)$$

The NRCA index measures the degree of deviation of a country's actual export from its comparative-advantage-neutral level in terms of its relative scale with respect to the world export market and thus provides a proper indication of the underlying comparative advantage (Yu et al., 2009). The formula of NRCA, as stated in Mahajan (2019), is as follows:

$$NRCAji = \Delta Eji/E = Eji/E - EiEj/EE \quad (3)$$

Where *Eji* is the Malaysian export of cosmetics, *Ei* is the export of cosmetics by ASEAN countries, *Ej* is the total Malaysian export, and *E* is the total export by ASEAN countries. If the NRCA index is greater than 0, then the country's commodities have a comparative advantage. Nonetheless, if the NRCA score is below 0, it indicates that the country's goods have no competitive advantage. The RCA, RSCA, and NRCA indexes are discussed in Table 1 (Section 4) to measure the direction of export as to whether it shows the export advantage or disadvantage by comparing the first year and the last year of this study.

3.3 Export Similarity Index

Additionally, this study developed an export similarity index (ESI) to measure the competition of exports between Malaysia and selected ASEAN countries. According to Erlat and Ekmen (2009), ESI was developed by Finger and Kreinin in 1979. The calculation of ESI is:

$$ESI(ab,c) = \sum min\left[Xj(a,c) / \sum Xj(a,c) , Xj(b,c) / \sum Xj(b,c) \right] \quad (4)$$

Where *ESI (ab,c)* is the export similarity index of countries *a* and *b* in the common market *c*, *Xj(a,c)* is the export of cosmetic products from country *a* (Malaysia) to country *c* (ASEAN countries), and similarly, *Xj(b,c)* refers to the export of cosmetic products from country *b* (Singapore/Thailand/Indonesia) to country *c* (ASEAN countries), $\sum$ *Xj(a,c)* refers to total export of cosmetic products from Malaysia to ASEAN countries, and $\sum$ *Xj(b,c)* refers to the total export of cosmetic products from Singapore/Thailand/Indonesia to ASEAN countries. The value of ESI may take a value between 0 (no similarities in export) and 100 (complete export overlap).

3.4 Model

This study uses time series data for 30 years from 1989 to 2019 by using an ARDL approach to examine the factor affecting the export competitiveness of Malaysia's cosmetic products. This model uses three indicators as the dependent variables for export competitiveness, namely, RCA, RSCA, and NRCA. The equation of the econometric model is expressed as given below:

$$RCA/\ RSCA\ /\ NRCA\ = \beta_0+\beta_1 REER_t + \beta_2 TL_t + \beta_3 INF_t + \beta_4 LNGDP_t + \beta_5 LNMS_t + \varepsilon_t \quad (5)$$

Where β_0 is the constant or intercept, $REER_t$ is the real effective exchange rate, TL_t is trade liberalisation (measured as trade-to-GDP ratio), INF_t is inflation, $LNGDP_t$ is the logarithm of gross domestic product, $LNMS_t$ is the

logarithm of money supply, and ε_t is error term of the model. The greater detail of the measurement of these following independent variables is as follows:

The secondary data is subjected to the Autoregressive Distributed Lag (ARDL) approach using ADF (Augmented Dickey-Fuller) Unit Root Test, Cointegration Test, Long-Run Bound Test, Error Correction Model, and Stability Test. The specified ARDL models are as follows:

$$\Delta RCA = \beta_0 + \sum_{i=1}^{p} \beta_1 \Delta RCA_{t-1} + \sum_{i=0}^{p} \beta_2 REER_{t-1} + \sum_{i=0}^{p} \beta_3 TL_{t-1} + \sum_{i=0}^{p} \beta_4 INF_{t-1} + \sum_{i=0}^{p} \beta_5 LNGDP_{t-1} + \sum_{i=0}^{p} \beta_6 LNMS_{t-1} + \beta_7 RCA_{t-1} + \beta_8 REER_{t-1} + \beta_9 TL_{t-1} + \beta_{10} INF_{t-1} + \beta_{11} LNGDP_{t-1} + \beta_{12} LNMS_{t-1} + \varepsilon_t \quad (6)$$

$$\Delta RSCA = \beta_0 + \sum_{i=1}^{p} \beta_1 \Delta RSCA_{t-1} + \sum_{i=0}^{p} \beta_2 REER_{t-1} + \sum_{i=0}^{p} \beta_3 TL_{t-1} + \sum_{i=0}^{p} \beta_4 INF_{t-1} + \sum_{i=0}^{p} \beta_5 LNGDP_{t-1} + \sum_{i=0}^{p} \beta_6 LNMS_{t-1} + \beta_7 RSCA_{t-1} + \beta_8 REER_{t-1} + \beta_9 TL_{t-1} + \beta_{10} INF_{t-1} + \beta_{11} LNGDP_{t-1} + \beta_{12} LNMS_{t-1} + \varepsilon_t \quad (7)$$

$$\Delta NRCA = \beta_0 + \sum_{i=1}^{p} \beta_1 \Delta NRCA_{t-1} + \sum_{i=0}^{p} \beta_2 REER_{t-1} + \sum_{i=0}^{p} \beta_3 TL_{t-1} + \sum_{i=0}^{p} \beta_4 INF_{t-1} + \sum_{i=0}^{p} \beta_5 LNGDP_{t-1} + \sum_{i=0}^{p} \beta_6 LNMS_{t-1} + \beta_7 NRCA_{t-1} + \beta_8 REER_{t-1} + \beta_9 TL_{t-1} + \beta_{10} INF_{t-1} + \beta_{11} LNGDP_{t-1} + \beta_{12} LNMS_{t-1} + \varepsilon_t \quad (8)$$

Models 6, 7, and 8 represent different export competitiveness indexes. The first part of β_1 until β_6 represents the short-run relationship, and β_7 until β_{12} represents the long-run relationship. According to Pesaran et al. (2001), the cointegration test measures the existence of the long-run relationship between variables by using the F-test. In this test, a cointegration relation exists if F-statistic is greater than the upper critical value; however, there is no cointegration if F-statistic is less than a critical value bound critical value. Nonetheless, if the value falls between the lower bound and upper bound critical values, the outcome is inconclusive.

If there is a long-run relationship, the Error Correction Model (ECM) is

employed to get the short-run results. The Error Correction Term in this model also estimates the speed of adjustment needed to restore the long-run equilibrium by following a short-run shock. The ECM can be formulated as follows:

$$\Delta RCA = \beta_0 + \sum_{i=1}^{p} \beta_1 \Delta RCA_{t-1} + \sum_{i=0}^{p} \beta_2 REER_{t-1} + \sum_{i=0}^{p} \beta_3 TL_{t-1} + \sum_{i=0}^{p} \beta_4 INF_{t-1} + \sum_{i=0}^{p} \beta_5 LNGDP_{t-1} + \sum_{i=0}^{p} \beta_6 LNMS_{t-1} + \alpha_1 ECM_{t-1} + \varepsilon_t \quad (9)$$

$$\Delta RSCA = \beta_0 + \sum_{i=1}^{p} \beta_1 \Delta RSCA_{t-1} + \sum_{i=0}^{p} \beta_2 REER_{t-1} + \sum_{i=0}^{p} \beta_3 TL_{t-1} + \sum_{i=0}^{p} \beta_4 INF_{t-1} + \sum_{i=0}^{p} \beta_5 LNGDP_{t-1} + \sum_{i=0}^{p} \beta_6 LNMS_{t-1} + \alpha_1 ECM_{t-1} + \varepsilon_t \quad (10)$$

$$\Delta NRCA = \beta_0 + \sum_{i=1}^{p} \beta_1 \Delta NRCA_{t-1} + \sum_{i=0}^{p} \beta_2 REER_{t-1} + \sum_{i=0}^{p} \beta_3 TL_{t-1} + \sum_{i=0}^{p} \beta_4 INF_{t-1} + \sum_{i=0}^{p} \beta_5 LNGDP_{t1} + \sum_{i=0}^{p} \beta_6 LNMS_{t-1} + \alpha_1 ECM_{t-1} + \varepsilon_t \quad (11)$$

Lastly, cumulative sum (CUSUM) is applied to this study to analyse the stability of the long-run model. This test is important to ensure the reliability of the results. If the null hypothesis of this model fails to be rejected, the long-run coefficients are stable and reliable.

4. Result and Discussion

4.1 Malaysian Cosmetic Export Competitiveness Indexes

The RCA index produces the same pattern of results as the RSCA and NRCA indexes. The result reveals that the export competitiveness of Malaysian cosmetics has been fluctuating and inconsistent throughout the last three decades. Table 1 summarizes the export competitiveness indexes for the first year in 1998 and the last year in 2019. The direction of change for Malaysian export competitiveness indexes is consistent, from the export advantage in 1998 (start of the period) to the export disadvantage in 2019 (end of the period). According to the pattern of export competitiveness indexes, it is unlikely that Malaysia will be able to achieve a comparative advantage in exports of the cosmetics industry

shortly. However, the industry has the potential to be improved, as the average export competitiveness indexes for these past 30 years have advantages and prospects.

Table 1: Summary of Malaysian cosmetic export competitiveness indexes in the ASEAN Markets

	RCA	RSCA	NRCA
1998 (Start of the period)	1.4622	0.1877	0.0057
2019 (End of the period)	0.6782	-0.1918	-0.0028
Changes	-0.7841	-0.3795	-0.0085
Direction of change	(-)	(-)	(-)
Mean	1.0550	0.0076	0.0006

4.2 Unit Root Test

Unit Root Test for this study uses the Augmented Dickey-Fuller (ADF) and the Philip-Perron test. The lag of this study is determined by the Schwarz criterion for the ADF. At the 5% significance level, the ADF result shows that all variables integrate order at the first difference I (1) except for RSCA. However, the result of the Philip-Perron test indicates that all variables integrate order at the first difference I (1). This result holds an assumption that all variables are integrated at I (1) and can be examined by using the ARDL approach.

Table 2: ADF Unit Root Test

Variable	**Level I (0)**				**1st Difference I (1)**			
	Intercept	**Trend and Intercept**	**Intercept**	**Trend and Intercept**	**Intercept**	**Trend and Intercept**	**Intercept**	**Trend and Intercept**
	t-statistic	**p-value**	**t-statistic**	**p-value**	**t-statistic**	**p-value**	**t-statistic**	**p-value**

RCA	-2.1109	0.2421	-2.5720	0.2946	-2.9450	0.0533	-4.1328	0.0154*
RSCA	-2.0755	0.2554	-2.6720	0.2547	-2.6136	0.1026	-2.5584	0.3003
NRCA	-2.2871	0.1830	-2.7636	0.2215	-3.5711	0.0135*	-3.3938	0.0733
REER	-1.5013	0.5193	-2.8854	0.1814	-4.8550	0.0005**	-4.7602	0.0035**
TL	-0.6219	0.8511	-1.8829	0.6374	-3.8464	0.0067**	-4.4305	0.0076**
INF	-4.2950	0.0021**	-5.1727	0.0012**	-6.7810	0.0000**	-6.6614	0.0000**
LNGDP	-2.1575	0.2251	-5.9502	0.0003**	-4.0320	0.0053**	-3.5333	0.0592
LNMS	-0.8609	0.7865	-2.0025	0.5765	-7.8195	0.0000**	-9.6146	0.0000**

Notes: ** (*) denotes rejection of the hypothesis at 5% (1%) significance level

Table 3: Philip-Perron test

Variable	**Level**				**1st Difference I(1)**			
	Intercept	**Trend and Intercept**	**Intercept**	**Trend and Intercept**	**Intercept**	**Trend and Intercept**	**Intercept**	**Trend and Intercept**
	t-statistic	**p-value**	**t-statistic**	**p-value**	**t-statistic**	**p-value**	**t-statistic**	**p-value**
RCA	-2.0108	0.2809	-2.3090	0.4167	-5.5918	0.0001*	-5.5519	0.0005*
RSCA	-1.7687	0.3881	-2.1657	0.4904	-4.9888	0.0004*	-4.9103	0.0024*
NRCA	-2.3958	0.1513	-2.7731	0.2173	-7.0111	0.0000*	-7.0457	0.0000*
REER	-1.5013	0.5193	-2.8854	0.1814	-4.8550	0.0005**	-4.7602	0.0035**
TL	-0.6219	0.8511	-1.8829	0.6374	-3.8464	0.0067**	-4.4305	0.0076**
INF	-4.2950	0.0021**	-5.1727	0.0012**	-6.7810	0.0000**	-6.6614	0.0000**
LNGDP	-2.1575	0.2251	-5.9502	0.0003**	-4.0319	0.0053**	-3.5333	0.0592
LNMS	-0.8609	0.7865	-2.0025	0.5765	-7.8195	0.0000**	-9.6146	0.0000**

Notes: ** (*) denotes rejection of the hypothesis at 5% (1%) significance level

4.3 Cointegration Test

Table 4 shows the cointegration test result from the Bound Test. The results show that all model series have a cointegrating relationship among the

variables as F-statistic above the upper value I (1). These results also indicate a long-run relationship among these dependent variables (RCA, RSCA, and NRCA) at a 5% significance level.

Table 4: Cointegration Test (Bound Test)

Model Series	F-Statistics	Significant Level	Bound Critical Values (Finite Sample: n=1000)	
			I (0)	I (1)
ΔRCA	6.4371	5%	2.39	3.38
ΔRSCA	5.6118	5%	2.39	3.38
ΔNRCA	7.0630	5%	2.39	3.38

4.4 Factors Affecting Malaysian Export Competitiveness in ASEAN Markets

4.4.1 Long-Run Relationship Analysis

Table 5 shows the results of ARDL (1, 0, 1, 1, 0, 1) estimation for RCA, RSCA, and NRCA models in the long-run coefficients of the variables based on the Akaike Information Criterion (AIC). The RCA and RSCA indexes indicate that inflation (INF) has a significant negative at a 5% significance level. The result is supported by EL (2018) and Khaldun et al. (2018). A 1% increase in inflation (INF) will cause a decrease of about 0.1438 units and 0.0609 units in the RCA and RSCA indexes, respectively. Basically, inflation will cause the domestic price of cosmetic products to increase and will affect export competitiveness.

At a 5% significance level, logarithm of gross domestic product (LNGDP) has a significant negative long-run relationship with the NRCA index. This result is supported by Etale and Etale (2016) and the Keynesian theory, as income increases will encourage citizens to buy more imported goods. However, the impact of LNGDP is minimal, as a 1% increase in GDP will decrease the NRCA

index by around 0.0002 units.

Table 5: Estimated long-run coefficients by using the ARDL approach

Models	**RCA**		**RSCA**		**NRCA**	
	Coefficient	**t-Statistics [P -Value]**	**Coefficient**	**t-Statistics [P -Value]**	**Coefficient**	**t-Statistics [P -Value]**
REER	-0.0015	-0.1202 [0.9055]	-0.0007	-0.1182 [0.9072]	-0.0002	-2.0192 [0.0571]
TL	-0.0003	-0.1199 [0.9058]	0.0002	0.1614 [0.8735]	-0.0000	-1.2456 [0.2273]
INF	-0.1438	-2.4737 [0.0230*]	-0.0609	-2.3692 [0.0286*]	-0.0010	-1.9303 [0.0679]
LNGDP	-1.9113	-1.6004 [0.1260]	-0.7861	-1.4800 [0.1553]	-0.0226	-2.2613 [0.0350*]
LNMS	0.5674	1.0330 [0.3146]	0.2263	0.9548 [0.3517]	0.0060	1.2395 [0.2295]

Note: * (**) denotes rejection of the hypothesis at 5% (1%) significance level

4.4.2 Short-Run Relationship Analysis

Table 6 illustrates the short-run relationship between the RCA, RSCA, and NRCA indexes. Short-run analysis indicates that trade liberalisation has a strong negative impact on export competitiveness. At a 5% significance level, trade liberalisation (TL) has a significant negative impact on the export competitiveness of Malaysia's cosmetic industry, measured by the RCA, RSCA, and NRCA in all models. A 1% increase in TL change will decrease the RCA index by around 0.0060 units compared to 0.0020 units and 0.0001 units for the RSCA and NRCA, respectively. The result does not prove the summary of Samavong (2019); the result did highlight that the ASEAN Free Trade Area (AFTA), the ASEAN Common Effective Preferential Tariff (CEPT) Scheme, and the ASEAN Harmonized Cosmetic Regulatory System do not bring positive impacts on this industry. Mahmood (2001) also mentioned that the removal of tariffs and non-tariffs under this scheme will bring pressure to achieve and

increase export competitiveness. Furthermore, this action also worsens domestic competitors, as Fan et al. (2019) also summarise that a bilateral decrease of tariffs on imported final goods has a negative effect on domestic businesses since foreign products become relatively more affordable and, as a result, more competitive on the domestic market.

The other factor causing the negative effect of trade liberalisation is the low utilisation of this agreement. According to Sukegawa (2021), there are two reasons for the low utilisation of the Free Trade Agreement (FTA). Firstly, in some circumstances, import tariffs are exempted in the importing country due to investment incentives, particularly when the exports in question are integrated into the supply chain. Other reasons include a lack of awareness and understanding of the FTA system, particularly among small- and medium-sized companies and companies that handle small-lot cargo; additionally, some companies consider the procedures involved in utilising FTAs to be cumbersome, as the cost and effort required throughout the procedure are not proportional to the value of their exports.

The RCA and RSCA indexes illustrate that logarithm of gross domestic product (LNGDP) has a significant negative at a 5% significance level. The impact of a 1% increase in GDP change will decrease the RCA and RSCA indexes by about 0.0317 units and 0.0136 units, respectively. These are also consistent with the findings of Jawaid et al. (2016), Waliullah et al. (2010), and Khaldun et al. (2018). The Keynesian theory also supports this result, as domestic income increase will encourage more people to purchase imported goods (which might be more popular than Malaysian products), bringing a negative result on export competitiveness.

In the short run, logarithm of money supply (LNMS) has a significant

negative short-run relationship with the RCA, RSCA, and NRCA indexes at a 5% significance level. A 1% increase in MS change will decrease the RCA and RSCA index by about 0.0043 units and 0.0013 units, respectively. This result contradicts the finding of Waliullah et al. (2010) and the theory that the depreciation of the home country's currency increases money supply and leads to an increase in export. However, based on the J-curve effect, there is a possibility for depreciation of the country's currency, causing an increase in imports in the short run due to the time lag. In the long run, the effect of this lag adjustment will improve the current account as export increases, as stated in the theory.

The result of ECM (t-1) in all models is negative and statistically significant, which shows there is a short-run relationship between RCA, RSCA, and NRCA with the independent variables. The result indicates that the annual adjustment of RCA_t, $RSCA_t$, and $NRCA_t$ will be about 55%, 50%, and 74% of the deviation of RCA_{t-1}, $RSCA_{t-1}$, and $NRCA_{t-1}$, respectively.

Table 6: Estimation of short-run coefficients by using the Error Correction Model

Models	**RCA**		**RSCA**		**NRCA**	
	Coefficient	**t-Statistics [P -Value]**	**Coefficient**	**t-Statistics [P -Value]**	**Coefficient**	**t-Statistics [P -Value]**
Δ(TL)	-0.0060	-3.0067 [0.0073**]	-0.0020	-2.5384 [0.0200*]	-0.0001	-4.1655 [0.0005**]
Δ(INF)	-0.0237	-1.8441 [0.0808]	-0.0078	-1.5263 [0.1434]	-0.0002	-1.2569 [0.2233]
Δ(LNGDP)	-3.1734	-6.2523 [0.0000*]	-1.3623	-6.5368 [0.0000**]	-	-
Δ(LNMS)	-0.4284	-3.2654 [0.0041*]	-0.1252	-2.4049 [0.0265*]	-0.0074	-5.3421 [0.0000**]
ECM (t-1)	-0.5454	-7.6999 [0.0000*]	-0.4952	-7.1894 [0.0000**]	-0.7364	-8.0171 [0.0000**]

Note: * (**) denotes rejection of the hypothesis at 5% (1%) significance level

4.5 Stability of Long-Run Model

The stability of the long-run coefficient in the ASEAN market is calculated by using the cumulative sum test on the recursive residuals. Figures 1, 2, and 3 represent the results of the cumulative sum for the RCA, RSCA, and NRCA models. All the results indicate that the cumulative sum test lies within the interval band at a 5% significance level. This shows that there is no structural instability in the residuals of the equation for every model in this study.

Figure 1: Plot of Cumulative Sum of RCA Index

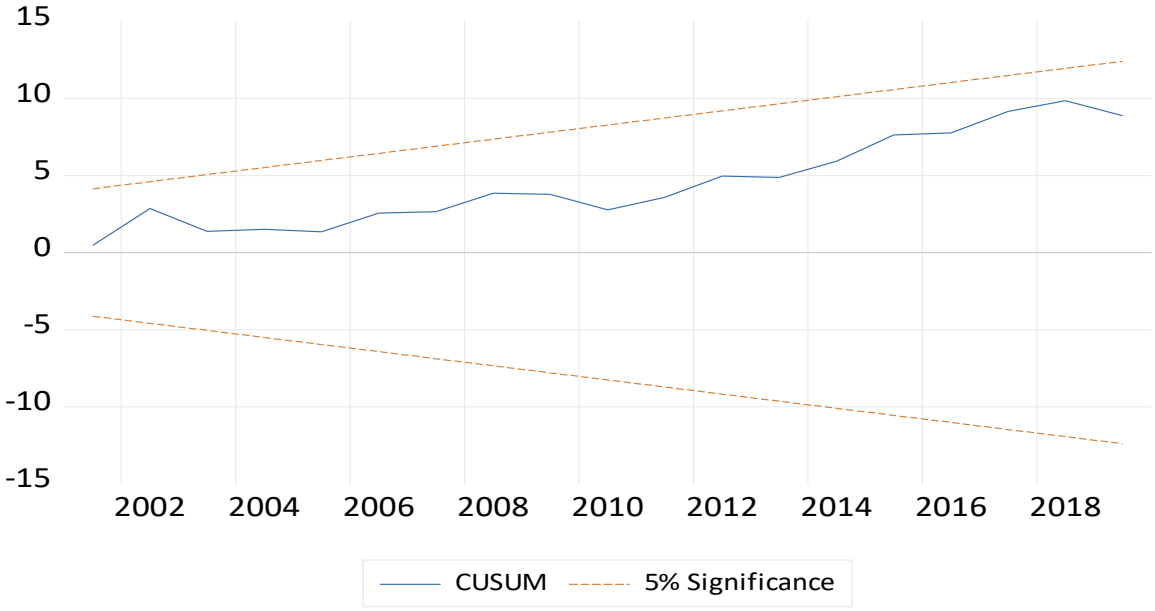


Figure 2: Plot of cumulative sum of RSCA Index

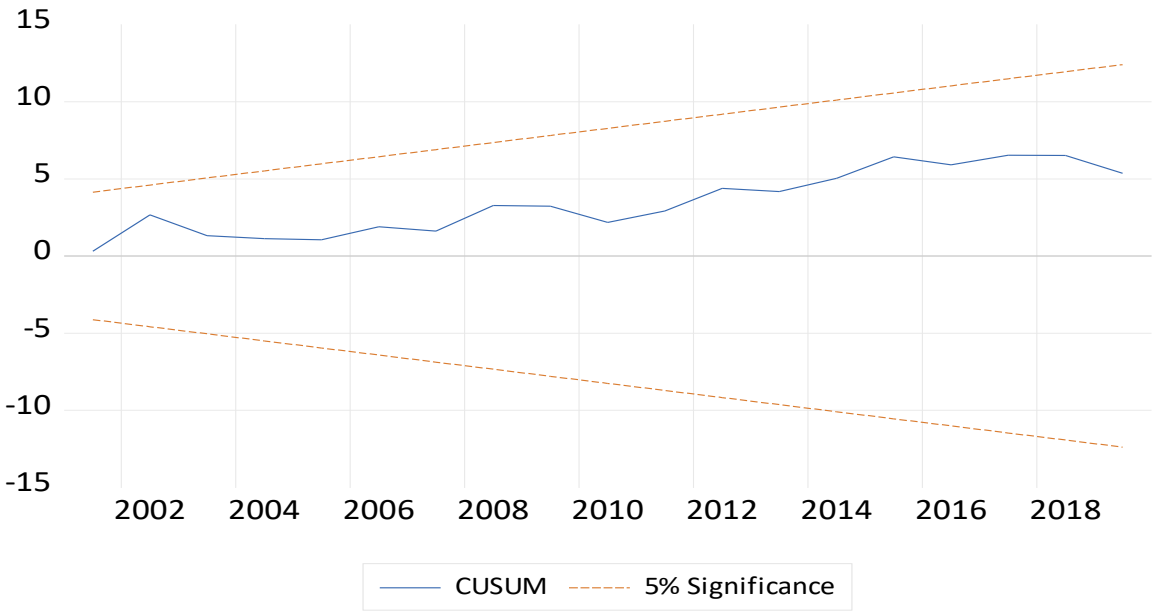
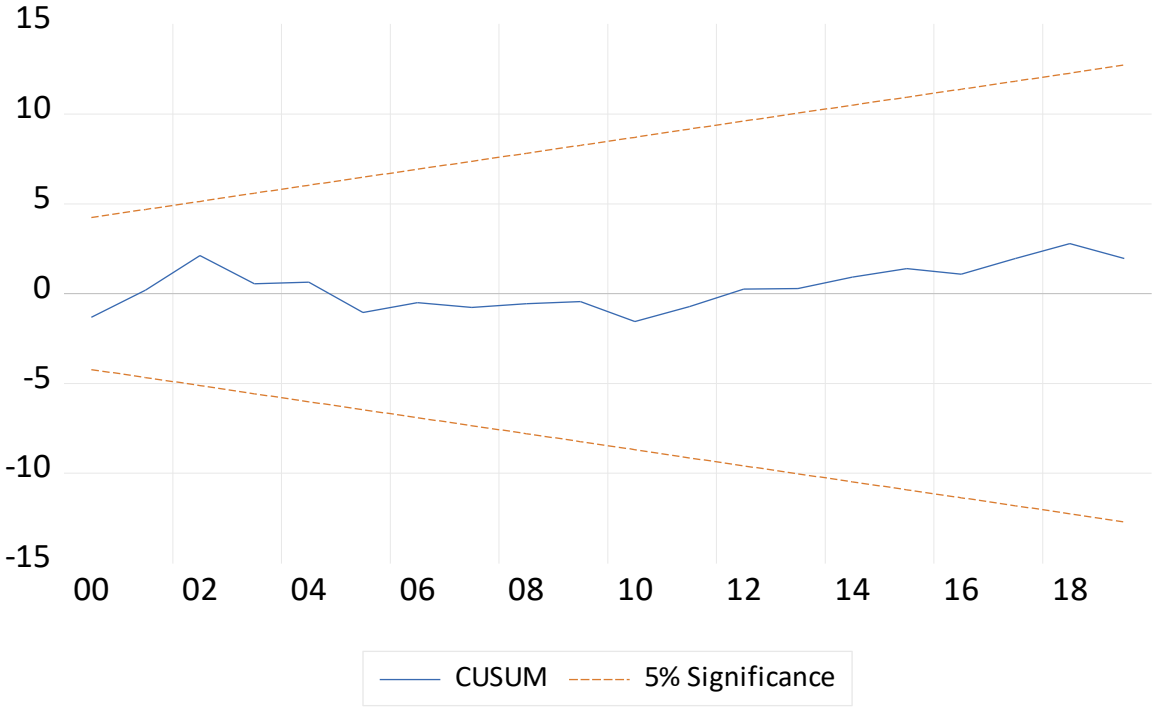


Figure 3: Plot of cumulative sum of NRCA Index



4.6 Export Similarity Index Between Malaysia with Singapore, Thailand and Indonesia

The Export Similarity Index (ESI) is used to examine the similarity of exports' portfolios between Malaysia and other ASEAN markets. The value of

ESI may take a value between 0 (no similarities in export) and 100 (complete export overlap). This study chooses the top three countries in the export of their cosmetic products to the ASEAN market. Table 7 shows the ESI of Malaysia with Singapore, Thailand, and Indonesia. The average ESI between Malaysia and Singapore, as well as Malaysia and Thailand, are around 19.32 and 19.76, respectively, while the ESI of Malaysia and Indonesia is around 14.98. This suggests that competition in the export of cosmetic items on ASEAN markets is still relatively low, as Malaysia has the least similar export of cosmetic products among these countries.

Table 7: Export Similarity Index between Malaysia with Singapore, Thailand, and Indonesia

Year	Malaysia - Singapore	Malaysia - Thailand	Malaysia - Indonesia
1989	32.9293	30.5941	2.4572
1990	33.2799	56.2429	1.3727
1991	36.4861	36.8568	1.4150
1992	28.5389	28.5389	2.5163
1993	22.2677	22.2677	14.5649
1994	19.3786	19.3786	17.7993
1995	12.0491	12.0491	12.0491
1996	12.0252	12.0252	12.0252
1997	12.7862	12.7862	12.7862
1998	14.4156	14.4156	8.6343
1999	11.9964	11.9964	11.8754
2000	14.6446	14.6446	14.6446
2001	14.8716	16.0097	15.4505
2002	15.6189	15.0290	19.0159
2003	17.7766	17.8598	18.2196
2004	16.6783	16.6783	16.6783
2005	12.6786	12.6786	12.6786
2006	14.3037	14.3037	14.3037
2007	15.6339	15.6339	15.6339

Year	Malaysia - Singapore	Malaysia - Thailand	Malaysia - Indonesia
2008	19.2945	19.2945	19.2945
2009	19.9284	19.9284	19.9284
2010	20.2814	20.2814	20.2814
2011	18.7501	18.7501	18.7501
2012	18.0238	18.0238	18.0238
2013	18.5671	18.5671	18.5671
2014	18.5756	18.5755	18.5755
2015	21.5045	21.5045	21.5045
2016	21.2297	21.2297	21.2297
2017	21.0025	13.0497	21.0025
2018	20.6497	20.6497	20.6497
2019	22.7548	22.7548	22.5286

5. Conclusion

This study examines three different export competitiveness indexes of the Malaysian cosmetic industry in ASEAN markets. According to the RCA, RSCA, and NRCA indexes, Malaysia has shown a promising trend in the supply and demand of cosmetic products in Malaysia. The Malaysian cosmetic industry in these 30 years has been unstable and has not obtained a comparative advantage since 2006, alarming the cosmetic industry and the Malaysian government to take necessary actions to revitalise or exacerbate the development of the industry.

The Malaysian GDP negatively affects the export competitiveness of Malaysian cosmetics in both the long and short term. Long-run analysis shows that an increase in the relative price of commodities due to inflation reduces export competitiveness. Short-run analysis shows trade liberalisation and money supply have negative impacts on cosmetic export competitiveness. Depreciating the home country's currency as the money supply increases supposedly boosts exports. However, this finding can be explained by the J-curve effect, which is a

time lag in response to a money supply increase. Export similarity indexes between Malaysia and other ASEAN countries (Singapore, Thailand, and Indonesia) are still low, indicating minimal export competition for cosmetic products in ASEAN markets.

In summary, all the factors have significant negative impacts on Malaysian cosmetic export competitiveness. Based on this result, Malaysian consumers are more likely to buy foreign cosmetic products compared to Malaysian products. Furthermore, Malaysia, Singapore, Thailand, and Indonesia have low competition among themselves, suggesting that ASEAN countries are not competing with each other because the most prominent competitors are from other regions. Therefore, ASEAN countries' cosmetic industries may not be benefiting from the AFTA-CEPT or any bilateral trade agreement. As for a future study, the cosmetic export competition among all ASEAN countries in the world market and identifying the factors affecting it are recommended to prove the statement above.

ASEAN has good bilateral trade agreements to promote export. However, this trade liberalisation does not benefit ASEAN countries in this industry if the consumers are more interested in buying other regional products. Authorities responsible for policymaking in the ASEAN nations should introduce measures and strategies that stimulate the consumption and acquisition of products manufactured within the region. Such measures may comprise preferential tariffs that facilitate intraregional trade and educational programs aimed at enhancing consumers' awareness of the advantages of buying ASEAN goods. By prioritising these particular measures, policymakers can enhance the export competitiveness of ASEAN nations and foster the economic advancement of the region.

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