

Do the Pandemic of COVID- 19 Affect Cosmetic Export of Thailand?

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Abstract

The objective of this research was to find the impact of COVID-19 pandemic on the cosmetic export of Thailand. The multiple linear regression was employed. The monthly data period of study was from January 2010 to March 2021. The result showed that exchange rate, inflation, GDP growth rate, average wage, real effective exchange rate, business sentimental index, and the pandemic of COVID-19 affected the cosmetic export of Thailand. The result showed that pandemic of COVID-19 had a negative effect on the value of cosmetic export. Therefore, the cosmetics industry must adapt to handle with that situation. Though people work less on the workplace and using more online platform for working the cosmetics still be one of the significant things to make people confidential for working in term of social media platform or online platform that they still need to communicate with others.

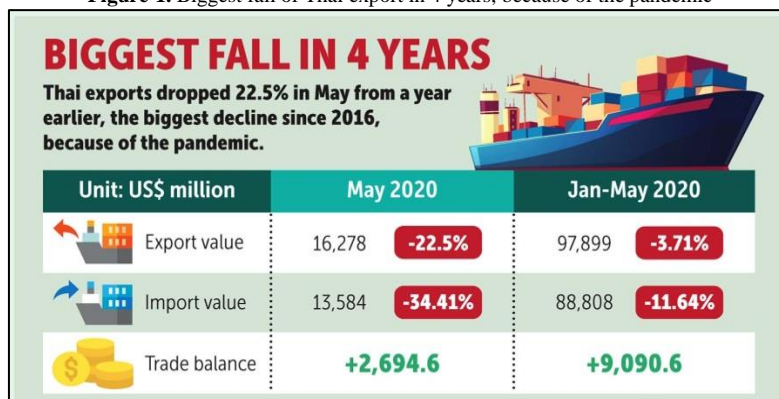
Keywords: COVID-19; Cosmetic; Thailand.

1. Introduction

From January 2020, Coronavirus disease (COVID-19) has spread all over the world. It has had severe impacts on all socio-economic sectors of all countries. Major impacts are the retail, transportation, and other service sectors. For the impact on Thailand, the coronavirus outbreak will have a direct impact on Thai’s tourism sector. This will affect the businesses in Thailand related to tourism such as hotels, restaurants, travel agencies and souvenir shops, etc.

According to a nationwide lockdown to control the spread of the coronavirus, it has directly affected to freight transport of Thailand that could not operate. From research data of the Export- Import Bank of Thailand ([Embassy of the Kingdom of the Netherlands in Thailand, 2020](#)) said “it was halfway through for the year 2020 that was full of difficulties for Thai entrepreneurs. After having to face the situation of the COVID-19 epidemic that has dragged the global economy and the Thai economy this year is likely to contract the highest in several decades.” Although the latest epidemic situation in Thailand can be controlled well through cooperation of all sectors. Which resulted in economic activity and domestic demand in particular, consumption began to show signs of improvement. But the crisis in many countries around the world as the number of new cases hit new high record, the foreign demand that used to be the mainstream in supporting the Thai economy has continued to weaken. This is reflected in the latest May 2020 export value that contracted by 22.5 percent ([Figure 1](#)). The EXIM BANK forecasts that Thailand's exports in 2021 will grow back again at the level of 2.5 to 4 percent. There are up to 9 markets, which are the export market for the top 20 of Thailand such as China, Malaysia, Indonesia, CLMV (Cambodia, Lao PDR, Myanmar, and Vietnam), South Korea and Taiwan. The major export products of Thailand are plastic resins, instant oils, chemicals, cosmetics, skin care products, fresh fruit, rubber, sugar, tapioca products and drinks.

Figure-1. Biggest fall of Thai export in 4 years, because of the pandemic



Source: Bangkok Post (2020)

This research will focus on cosmetic products. International markets have confidence in the quality and makeup of Thailand. Thailand exported cosmetics to foreign markets worth more than 100 billion baht per year. From the report of Cosmetics Design-Asia website found that COVID-19 has affected cosmetics market, makeup, and fragrances. Due to more and more people work from home and avoid going out. While skin care products and personal hygiene is likely to increase. The latest information from the Thai Cosmetic Manufacturers Association reveals that export of beauty products and cosmetics decreased by 5.7 percent in the first quarter of 2020.

1.1. Objective of the Study

The objective of this study was to find the impact of COVID-19 pandemic on Thailand’s export of cosmetic products.

1.2. Benefit of the Study

The benefit of this study was to find the way to recovery and prepare to face for another crisis that might occur soon.

2. Theories and Literature Review

2.1. Followings are Factors that Might Affect Export

2.1.1. Exchange Rate

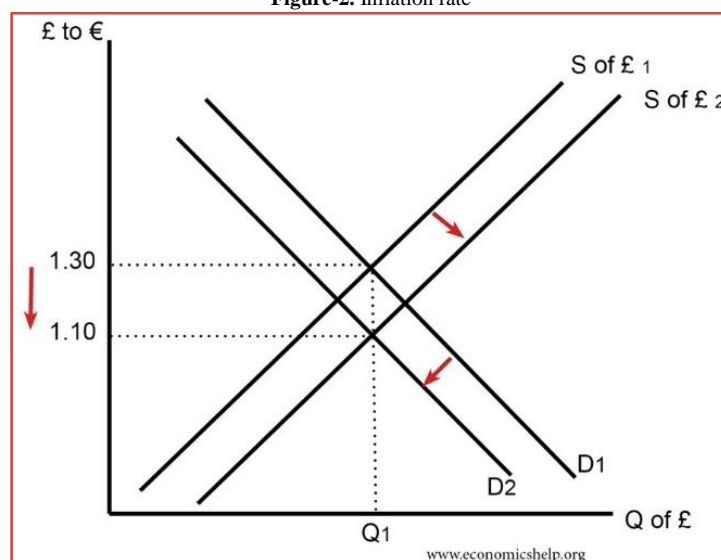
The price of one currency related to one unit of another currency is known as the foreign exchange rate. Exchange rate fluctuations affect international price of goods and services. The relative price of domestic goods and services falls as the dollar depreciates (the exchange rate falls), while the relative price of foreign goods and services rises. The shift in relative prices will boost US exports while lowering imports. When the value of the dollar rises (the exchange rate rises), the relative price of domestic goods and services rises while the price of foreign goods and services falls. The shift in relative prices will result in lower exports and higher imports for the United States.

2.1.2. Inflation Rate

The increase in the average price level of a basket of selected goods and services in an economy over time can be used to calculate a quantitative estimate of the rate at which purchasing power declines. A rise in the general level of prices, which is often expressed as a percentage, means that a unit of currency now buys less than it did previously.

The relationship of inflation and exchange rates, a higher inflation rate in the UK compared to other countries will tend to depreciate the value of the Pound Sterling because high inflation in the UK means that UK goods will rise in price faster than European goods. As a result, British goods become less competitive. There will be less demand for Pound Sterling as demand for UK exports declines. Additionally, European imports will be more appealing to UK consumers. As a result, they will provide pounds in order to be able to purchase Euros and Euro imports. The value of the Pound Sterling is depreciating due to the increase in the supply of pounds (figure 2).

Figure-2. Inflation rate



Source: economics help (2019)

2.1.3. Real Effective Exchange Rate

The weighted average of a country's currency in relation to an index or basket of other major currencies is known as the real effective exchange rate (REER). This exchange rate is used to determine the value of a country's currency in relation to the index of other major currencies. The US dollar, for example, has trading relationships with the eurozone, the United Kingdom, and Australia, with the US doing 70 percent of its trading with the eurozone, 20 percent with the United Kingdom, and 10 percent with Australia. The euro, the British pound, and the Australian

dollar would all have the same percentages in the basket of currencies, with the euro at 70 percent, the British pound at 20 percent, and the Australian dollar at 20 percent.

The euro exchange rate would account for 70 percent of the basket. The impact of a change in the euro on the basket would be greater than that of a change in the Australian dollar. If one of the exchange rates moved significantly but the basket's weighted average remained unchanged, it's possible that the other currencies moved in the opposite direction, offsetting the first currency's movement.

International competitiveness will be harmed by an increase in the real effective exchange rate. It indicates that the country's exports are relatively more expensive, resulting in decrease in export. When the real effective exchange rate is higher than the trading partner currency, the foreign currency appreciates.

2.1.4. GDP Growth Rate

The GDP growth rate is a measurement of how quickly the economy expand. The rate compares the country's economic output in the most recent quarter to the previous quarter. GDP is a measure of economic output. The most important indicator of economic health is the GDP growth rate.

2.1.5. Average Wage

Average wage is the mean salary of a group of labor based on reported salaries of respondents or individual workers. This measure is often monitored and used by government or other organizations as a benchmark for the wage level of individual workers in an industry or country. The usefulness case of this measure that is calculated in assessing wage levels is debatable, especially focusing on an economy where low pay is prevalent.

The effects of average wage on the exports come from the trade integration that occurs for international trade which is a mix of the developed and developing countries that has the wage inequality problems behind that. The trade integration based on Hecksher-Ohlin theory (H-O theory) said that it will generate wage differences across industries. The effect of the wage from the theoretical analyses on the labor market effect of trade integration which led the exporting and offshoring firms to outperform purely domestic firms in many dimensions including size, productivity, and wages. From the paper analysis based on exports and offshoring business on the average wage of the worker showing that the more exports or trading in the economy will result in the higher average wage.

2.1.6. Policy Interest Rate

The policy interest rate is an interest rate that the monetary authority sets to influence or stabilize the monetary variables in the economy. The increase in policy interest rates used for controlling the inflation, currency depreciation, excessive credit growth or capital outflows. The change in exchange rate due to the policy of interest rate put in action will result in a change in the exports amount as well.

2.1.7. Manufacturing Production Index (MPI)

Manufacturing Production Index (MPI) is a monthly index that is statistically generated for reflecting the quarterly GDP overview of the industrial sector. This index is used as an international standard.

3. Literature Review

[Embassy of the Kingdom of the Netherlands in Thailand \(2020\)](#), mentioned that the Covid-19 pandemic will have an exceptional effect on Thai economy in 2020, driving to an overhauled estimate for full-year financial compression of 5-6 percent, the most profound decrease since the Asian Money related Emergency in 1997. The Thai Business Sentiment Index in March hits its lowest level in 28 months, dropping to 88.0 points from 90.2 in February, primarily due to the economic consequences of the Covid-19 outbreak, the government curfew and the drought, reports of the Federation of Thai Industries. Most of the manufacturing sector is facing diminishing consumer and export demand. Supply side difficulties are expected to gradually soften when China takes up production again. Manufacturers of electronics, automotive parts, chemicals, petroleum, wood products, gems and jewelry, biotechnology products, foods, cosmetics, and herbal products have reported significant impacts from COVID-19 outbreak.

[The Thai Cosmetic Manufacturers Association \(n.d.-b\)](#), mentioned that lipstick sales in the middle of this year have dropped nearly 70 percent compared to those of previous year. The main reason is that nowadays women wear masks while going out. The use of lipstick is therefore less necessary. For Thailand, cosmetics and skincare business has total value of 1.68 billion baht, expected between 2019 and 2023 to grow at 7.14 percent (estimated as of 2018 by the University of the Thai Chamber of Commerce).

[The Thai Cosmetic Manufacturers Association \(n.d.-b\)](#), mentioned that COVID-19 dragged the cosmetics market this year, sales fell by 10 percent. The impact of the epidemic caused by the Coronavirus 2019, or COVID-19, affects Thai cosmetic industry like never. In the past, this industry had not been affected, whether the past major crisis "Tom Yum Goong". The causes of the COVID-19 epidemic hit Thai cosmetic industry are several reasons. On the export market, the problem of closing the country cannot be exported, especially the neighboring markets such as the CLMV countries, while the domestic market, consumer behavior has changed to stay at home more and more focus on keeping clean. As a result, hand sanitizer sells better. Overall, in the first quarter of 2020, export dropped by 5.7 percent.

[Phurita Boonlom \(2020\)](#), mentioned that in 2020, the revenue in the beauty products will drop by 30 percent. As a result, the beauty industry should level up to survive. During the peak of COVID-19 when streamed streams were absent, salons, spas, and wellness shuttered sales of beauty products. Former partners have seen big companies such

as Estée Lauder or L'Oréal stop producing dormitories and switch to produce gels for hospitals and doctors who are at the forefront of dealing with COVID-19.

Forbes Thailand (2020) mentioned that Kiss of Beauty, Thai brand beauty product distributor, directly affected by the COVID-19 situation causing the company to reduce its growth targets and postpone launching new products.

The website of CosmeticsDesign-Asia.com revealed information that COVID-19 was slowing down the cosmetics, makeup and perfume market. As more and more people work from home and avoid going out, skin care and personal hygiene products tend to grow. COVID-19 is changing the lifestyle and shopping habits of consumers like never been before. Especially in the beauty products, cosmetics, and body care products as well. The Thai Cosmetics Manufacturers Association reported that exports of beauty products and cosmetics to Thailand declined 5.7 percent in the first quarter of 2021. In addition to opportunities for manufacturing or offering products that meet the needs of the COVID era the export market that was ordered to press the brake for a while. You can switch to the accelerator to continue by Herbert Wongpusanachai, Managing Director of DHL Express Thailand, and Head of Indochina. Talking about what happened and suggesting the opportunity to move on. We are seeing a lot of signs in the beauty, makeup and personal care industries still having a chance to recover from today's crisis. As consumer around the world are still looking for the satisfaction of taking care of themselves or treatment while at home demand for body care product is likely to continue to grow.

OEM EXPO (2020) mentioned that the Covid-19 epidemic caused a heavy impact on the Thai cosmetics industry. Whether it is cosmetics Food Supplement and hair and body care products they were affected both in terms of production with higher costs. Changes in consumer behavior turned to pay more attention to health going out for less activities outside the home as a result, the purchase of cosmetic products decreased as well. However, there are various options for selling and marketing cosmetics and there are still a large group of consumers who are ready to buy. The sellers need to choose a distribution channel that can reach real consumers and drive sales quickly.

Thansettakij Multimedia mentioned that Cosmetics Industry three hundred thousand million baht collapsed heavily. Poisoning COVID-19 The export sector has dropped 10% after the global crisis. Big Cluster Health Suggest operators to accelerate adaptation. Won the state set a central price. After many raw materials, the price has risen, "Car-Mart" persistently fights to rock the production line of cleanliness products. Mr. Pongwiwat Teekirikul, Assistant Managing Director of Marketing and Product Creation, Karmart Public Company Limited, an importer, exporter, and distributor of cosmetics such as Karmart, Katie Hall (CATHY DOLL) said that after the outbreak of the COVID-19 virus. Since the beginning of the year, the company must adjust its plans to support. Recently, the production line has been adjusted to produce cleaning products and cleaning products, such as alcohol gels, wet wipes, etc. The new product launch plans we had all postponed. And turned to adjust the product line in the cleaning and washing group since the end of last month This makes it possible to produce products in time to meet the needs of both domestic and international.

Carluccio et al. (2015), analysis on wages on the exports career to see whether which factor impact wage and export by estimate the impact of international trade on wages using data for French manufacturing firms. The paper instrument firm-level trade flows with firm-specific instrumental variables based on world demand and supply shock on both export and offshoring shocks which they have a positive effect on wages. The result of the analysis showed that when the exports increase, the wage of people will increase for all occupational categories.

4. Methodology

To analyze the impact of COVID-19 pandemic on export of cosmetic products in Thailand, this research employed the "quantitative methodology" as the main approach. The period of study was from January 2010 to March 2021, in monthly data.

4.1. Model

The model used in this study are as followed:

$$\ln Ex = \beta_0 + \beta_1 Er + \beta_2 \ln Inf + \beta_3 Reer + \beta_4 \ln Gdpg + \beta_5 Avgw + \beta_6 \ln Policyi + \beta_7 \ln Li_exim + \beta_8 Bsi + \beta_9 Mpi + \beta_{10} Covid19 + \varepsilon$$

For the nonlinear variables, I will use log transformation to linearize the data to reduce the skewness and make the data close to normal distribution. Reducing the skewness of the variables by taking log makes it easier to use test statistics, for example, in the OLS regression analysis. Statistical inference in parameter testing is done well according to assumption. Take log is considered as non-linear transformation and is quite prevalent because most data in the real world is positively skewed.

4.2. Dependent Variable

Ex value of Thailand's cosmetic export (Baht)

4.3. Independent Variables

Er Exchange rate (THB/USD)

Inf Inflation in Thailand

Reer Real effective exchange rate in Thailand

Gdpg GDP growth rate (percentage point)

Avgw Average wages classified by industry in Thailand

Policyi Policy interest rate in Thailand (in percentage point)

- Li_exim Loan interest rate of export and import in Thailand (percentage point)
- Bsi Business sentiment index in Thailand (percentage point)
- Mpi Manufacturing production index of cosmetic product in Thailand (percentage point)
- Covid19 dummy variable
(= 1 if there is COVID-19, = 0 otherwise)
- β_0 Constant
- ε Errors or Residual

4.4. Addressing the Issue of Regression Model

4.4.1. Multicollinearity Problem

The correlation table was used pairwise comparison to ensure that none of the variables are strongly correlated.

4.4.2. Autocorrelation Problem

The Durbin-Watson, d-statistic, will be used to determine the existence of serial correlation within the dataset. It is important to ensure that the model does not exhibit serial correlation in its residuals, as it may cause the estimate to be biased and inconsistent. Durbin-Watson statistics will always have a value between 0 and 4. A value of 2.0 means that no autocorrelation has been found in the sample. Values from 0 to less than 2 indicate positive autocorrelation and values from 2 to 4 indicate negative autocorrelation. If there is autocorrelation problem, the command “prais” will be employed to solve this problem by adjusting the value of Durbin-Watson statistics.

4.4.3. Heteroskedasticity Problem

To detect whether the model exhibits the problem of heteroskedasticity, the Breusch-Pagan/Cook-Weisberg test will be used. If all standard errors obtained from the test are robust (ensured using the “Robust” function in STATA), there will also be no concern of heteroskedasticity.

5. Result

5.1. Result (After Solving the Problem of Autocorrelation and Heteroskedasticity)

Table-1. Regression results (after solving the problems)

Independent variables	After solving the problems (using “prais” and “robust” command)
Er	-0.0821** (0.0351)
lnInf	0.0753** (0.0445)
Reer	0.0011** (0.0141)
lnGdpg	-0.0720** (0.0367)
Avgw	0.0002*** (0.0000)
Policyi	0.7512 (0.4181)
Li_exim	-4.4111 (1.8758)
Bsi	0.0011*** (0.0102)
Mpi	0.0286*** (0.0095)
Covid19	-0.0688* (0.0827)

Note: values in parentheses are p value

* significance at 10 percent level

** significance at 5 percent level

*** significance at 1 percent level

Table-2. Descriptive statistics (after solving the problems)

	After solving the problems (Using prais and robust command)
Number of observations	99
R-squared	0.9497
Adjusted R-squared	-
Root MSE	0.2247
Durbin-Watson d-statistic	1.9528

By using command “prais” to solve autocorrelation problem and “robust” to solve heteroskedasticity problem, a re-analysis of the regression equation (R-square) was 0.9497, meaning that all independent variables were able to explain export cosmetics products of Thailand by 94.97 percent.

5.2. Exchange Rate, THB/USD (Er)

The presence of exchange rate, THB/USD is statistically significance at the 5 percent level in implying that, other things being equal, if exchange rate (THB/USD) increase 1 percent or appreciation, the value of export cosmetics will decrease by 8.21 million baht.

5.3. Inflation Rate (Inf)

The presence of inflation rate is statistically significance at the 5 percent level, implying that, other things being equal, if inflation rate increases 1 percent, the value of export cosmetics products will increase by 0.0753 percentage.

5.4. Real Effective Exchange Rate (Reer)

The presence of real effective exchange rate is statistically significance at the 5 percent level, implying that, other things being equal, if real effective exchange rate (THB/USD) increase 1 percent, the value of export cosmetics will increase by 0.11 million baht.

5.5. GDP Growth (Gdpg)

The presence of GDP growth rate is statistically significance at the 5 percent level, implying that, other things being equal, if inflation rate increases 1 percent, the value of export cosmetics products will decrease by 0.0720 percentage.

This is contrast with the assumption that if GDP growth rate increases, the value of export cosmetics will increase. In some situations, the effect of GDP growth could not generate the value of export because there was another external factor.

5.6. Average Wage (Avgw)

The presence of average wage is statistically significance at 1 percent level, implying that, other things being equal, if average wage increases 1 percent, the value of export cosmetics products will increase by 0.02271 million baht.

5.7. Policy Interest Rate (Policyi)

The presence of Policy interest rate is not statistically significant. Therefore, it can be concluded that average wage did not affect the value export of cosmetics products.

5.8. Loan Interest Rate of Export and Import (InLi_exim)

The presence of loan interest rate of export and import rate is not statistically significant. Therefore, it can be concluded that loan interest rate of export and import did not affect the value export of cosmetics products.

5.9. Business Sentiment Index (Bsi)

The presence of business sentiment index is statistically significant at 1 percent level, implying that, other things being equal, if Business sentiment index increases 1 percent, the value of export cosmetics products will increase by 0.11 million baht.

5.10. Manufacturing Production Index (Mpi)

The presence of business sentiment index is statistically significant at 1 percent level, implying that, other things being equal, if Business sentiment index increases 1 percent, the value of export cosmetics products will increase by 2.86 million baht.

5.11. Covid-19 Pandemic (Covid19)

The presence of Covid-19 pandemic (Covid19) is statistically significant at 10 percent level implying that, other things being equal, the pandemic of Covid-19 will decrease the value of export cosmetics products by 6.88 million baht.

6. Conclusion

From the analysis of multiple regression, we can conclude that all dependent variables affect on the value of Thailand's cosmetic export except policy interest rate and loan interest rate of export and import. The result can be summarized in table 3.

Table-3. Summarize the analysis of Multiple Linear Regression

Factors	Effect on value of Thai cosmetic export	
Exchange rate	affect	
Inflation	affect	
Policy interest rate		Not affect
GDP growth	affect	
Average wage	affect	
Real effective exchange rate	affect	
Business sentimental index	affect	
Loan interest rate of export and import		Not affect
Manufacturing production index	affect	
Covid-19 Pandemic	affect	

7. Policy Recommendation

The result showed that pandemic of COVID-19 had a negative effect on the value of cosmetic export. Therefore, the cosmetics industry must adapt to handle with that situation. Though people work less on the workplace and using more online platform for working the cosmetics still be one of the significant things to make people confidential for working in term of social media platform or online platform that they still need to communicate with others.

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