The Factors Affecting the Exports of Laos to China

Phetsavanh SOUPHAPHONE*, Thongphanh CHANTHAVONE and Pheng HER

Department of Economics, Faculty of Economics and Tourisms, Souphanouvong University, Lao PDR

***Correspondence**: *Phetsavanh SOUPHAPHONE, Technical Vocational School of Bokeo Province, Tel: +856 20 59491781, E-mail: Phetsavane@yahoo.com*

Article Info:
Submitted: Mar 14, 2023
Revised: May 22, 2023
Accepted: Jun 04, 2023

Abstract

This paper aims to study: the factors affecting on Lao PDR's exports to China from 1995-2020 by using OLS robust model.

The results shown that Lao PDR has a trade balance with China, especially since 1995-2010, there is a continuous trade deficit because during that period, the production base has not brought technology to help. The largest trade deficit is in 2013 with a deficit of 860.92 million dollars, accounting for 7.19% of the gross domestic product and the smallest deficit is in 1997 with a deficit of 4.64 million dollars, accounting for 0.27% of the gross domestic product.

For the OLS Robust model, it was found that the per capita income is the most important or the most impactful and has a one-way relationship with the export value of Lao PDR with a statistical significance level of 0.05. It means that if other factors are assumed, when the per capita income of Chinese people increases by 1%, it will result in the export value of Lao PDR increasing by 3.01% and vice versa, if the per capita income of Chinese people decreases by 1%, it will result in the value of Lao PDR's exports to China decreasing by 3.01%. as well. Followed by the economic growth rate of Lao PDR. Assuming that other factors are constant, when the economic growth rate of Lao PDR increases by 1%, it will result in the value of its exports to China increasing by 0.13% and vice versa, if its economic growth rate decreases by 1%, it will result in the value of its exports to China decreasing by 0.13% with a statistical significance level of 0.1. The inflation rate of Lao PDR affects the export of Lao PDR to China in the same direction with a statistical significance level of 0.01, which means that assuming other factors are constant, when the inflation rate of Lao PDR increases by 1%, it will result in the value of Lao PDR's exports to China increasing by about 0.01%. But on the other hand, if the inflation rate of the Lao PDR decreases by 1%, it will result in the value of its exports to China or China's imports from Laos decreasing by 0.01% because they feel that the goods are more expensive and the independent variables used in the model can explain the variables up to 94%.

Keywords: *Exports, Gross domestic product, Foreign direct investment, Exchange Rate*

1. Introduction

Exporting is important to the modern market because it offers a market to more people and companies. One of the main functions of diplomacy and foreign policy between governments is to promote trade, export and import for the benefit of all parties (Troy Segal, 2021). From the research company's request in 2019, it was found that the world's biggest exporters are China, America, Germany, Netherlands and Japan. China exports about 2.5 million dollars, with the main export products being electronic equipment and machinery. America exported 1.6 million dollars with most exports being capital goods. Germany exported about 1.5 million dollars, and the goods exported were vehicles to Japan, with Japan's export value of 705 billion dollars, and the Netherlands exported about 709 billion dollars. (Worldwide,2019).

The comprehensive strategic relationship between Lao PDR and China has created lasting diversity and prosperity through Lao-Chinese cooperation based on mutually beneficial cooperation. On September 8, 2020, which is an initiative that is important and useful to many countries in the region and internationally in economic-social development for technological progress, information security, including national security and common interests. At the same time, the Lao PDR also expressed its full support for the content of the speech of President Xi Jinping, which was delivered through a remote meeting on the occasion of the 75 th anniversary of the establishment of the United Nations, especially the important comments on six major points: 1). Being a partner in the fate of mankind; 2). Mutual cooperation is mutually beneficial; 3). Promotion of multilateral trade; 4). A new development concept; 5.) Multilateral cooperation and 6). Support for the centrality of the United Nations and others. In addition, in 2019, China is the number 1 investment country in Lao PDR with a total of 785 projects, with a total value of 12 billion US dollars and the second largest trading partner of Lao PDR, with a trade value of 3,540 million US dollars, an increase of 17.4%, and an import value of 1,600 million US dollars, an increase of 29.6%. And the export value is 1,940 million US dollars, an increase of 8.9% compared to the same period last year (Ministry of Foreign Affairs, 2019).

In 2020, Laos had an export value of 4,278 million dollars and an import value of 3,824 million dollars for a trade balance of 454 million dollars. However, the spread of the Covid-19 disease has greatly affected his exports. Therefore, on November 18, 2020, the Chinese government reduced the import tax rate from the Lao PDR to 0% with effect from December 1, 2020 onwards for 8,256 products exported to China, accounting for 97% of all products exported to China. During the first 9 months of 2020, trade between Laos and China was worth about 1,800 million dollars, decreasing compared to the same period last year, which was 2,300 million dollars due to the spread of the Covid-19 disease. Currently, China is the largest investor and the second largest trading partner of Lao PDR (Global Business, 2020).

From the problems mentioned above, students are interested in studying the factors that affect their exports to China by using the actual data from the commercial transactions between the two countries to analyze in order to be the basic information for the parties involved in setting the Lao-China trade policy to be able to meet the needs of exporters and importers more.

This paper aims to study the factors affecting on Lao PDR's exports to China from 1995-2020 by using OLS robust model.

2. Materials and Methods

2.1 Data Collection

The data used in this study was a time series data from 1995-2020. These data are taken from the Asian Development Bank (data on GDP, FDI, inflation rate, exchange rate and free trade index) and the Ministry of Industry and Trade of the Lao PDR (data on export and import goods from China).

2.2 Model

For an empirical analysis, the researchers used the OLS Robust model to analyze because this model is another option for the least square regression that uses a less restrictive hypothesis, especially it will give the regression coefficient much better when there are abnormal values in the data and violate the assumption of normal distribution of the missing value in the least square regression model, which can be written as a model as follows:

$$LnExp_t=\beta_0+\beta_1 LnGDP_t+\beta_2 LnUSD_t+\beta_3 LnFDI_t+\beta_4 Inf_t + \beta_5 TF_t + \varepsilon_t$$

$$\beta_1, \beta_3, \beta_5 > 0, \beta_2 > 0 \ or < 0, \beta_4 < 0$$

Where, $LnEXP_t$: logarithms of the value of Laos's exports to China in period t

β_0: constant coefficient

$\beta_1, \beta_2 \dots \beta_5$: the coefficients of independent variables

$LnGDP_t$: logarithms of the Chinese domestic product in period t

Inf_t: the inflation rate of Laos in period t.

$LnUSD_t$: logarithms of the exchange rate of kip per USD in period t.

$LnFDI_t$: logarithms of the Chinese investment in Laos in period t.

TF_t:trade freedom index of China in period t.

ε_t : error terms

For checking the distribution of data or the residuals distributed as the basic condition, if it is found that the residuals non-normal distributed, it will not be possible to use t-test, F-test, Chi-square test and other tests related to normally distributed will be used-the Jarque-Bera test:

H_0: Residuals are normally distributed

H_1: Residuals are normally distributed

3. Results

The value in parentheses "( )" is the value of t-test and the value in blanket is the value of standard error and *,**,*** is the statistically significance of 0.01,0.05 and 0.1 level respectively.

In the empirical analysis, attempts have been made to determine the factors influencing the value of exports of Laos to China from 1995-2020 by using the ordinal least squared (OLS) and OLS Robust model and found that the OLS model, there are three variables statistically significance. For the Durbin's alternative test and Breusch–Godfrey LM test is large than the critical value, meaning that we cannot reject the null hypothesis that there are no autocorrelation but in Jarque-Bera test showing that we reject the null hypothesis that the residuals are white noise means the residuals are not normally distributed, therefore the researchers continue to conduct with the OLS robust model and results in the multiple determination model has yielded an R square value of 0.9459 which implies that 94.59 percent of the total variation in value of exports is caused by the repressors involved in the model. The corresponding F-test statistic is very large and the corresponding P value is less than the critical value of 5% level which implies that the model is appropriate. The coefficient of GDP and trade freedom are positive significance at the statistically of 5% level while as the inflation is statistically significant of 1% level and against theories. According to the outcome of OLS robust indicated that the GDP of China is the main factor affecting on the exports of Laos to China, if 1% increase China's GDP will cause the exports of Laos increase by 1.307%. In contrast, if 1% decrease of the Chinese GDP will cause the exports of Laos to China or the imports of China from Laos decrease by 1.307%. Follow by the trade freedom of China, meaning that if Chinese government does not create trade barriers, it will result in an increase of Laos's exports to China which 1% increase in China's trade freedom score will cause Laos could exports to China increase by 0.229%. However, the results of the analysis shown that the constant coefficient has a negative statistically significance meaning that other variables that were not included in this model will reduce the exports of Laos to China.

4. Discussion

According to the empirical analysis the factors affecting on the exports of Lao PDR to China by using the time series data from 1995-2020 and implied with the OLS robust model found:

The inflation is statistically significant and against theories and the research of Thorvaldor.G, (1997) because increases in domestic inflation led to higher prices for exported goods and a decrease in exports as foreign consumers substitute in favor of lower-priced alternatives produced within their own country or imported from elsewhere. Naptania Ilmas, et al (2022) also found that inflation and exchange rates have a negative and significant effect on exports. They suggest the macroeconomic factors that exist in a country must still be considered and also considered in international trade activities. Besides the exchange rate, the inflation rate also affects the exports as expressed by (Silviana, 2016) that the inflation rate weakens the trade stability in which the condition of goods the price continues to surge during a certain time period. It causes weakening competitiveness resulting in the decline of export value.

The GDP of imports country and the value of exports of Laos has positive relationship as the study of B. Gururaj et al, (2016) that the performance of export sector is highly depending on other countries economic activity. S. Bakari, M. Mabroukib & A. Othmani (2018) found that the increase in GDP has a positive impact on imports but only for some products. Therefore, if policy makers are interested in the application of interest rates and tariffs to change the dynamic of imports they should create product-based import political economies. Ayodotun, A (2016) indicated that domestic income, foreign exchange reserves and trade liberalization all play significant roles both in the short-run and long-run import demand levels in sub-Sahara Africa. Therefore, trade policy authorities who aim at reducing imports to correct balance-of-payments imbalances in the long run should focus their efforts on policies that will reduce purchasing power at the macroeconomic level and implement policies that will ensure an increased domestic supply.

The trade freedom of China and the value of exports of Laos to China has positive relationship as the research of Robert J. Sonora (2008) that imports and exports are affected asymmetrically with respect to income, transaction costs, and economic freedom.

This study will provide some important information for related policymakers for implementation. Reducing barriers to trade generally represents a move toward free trade, there are situations when reducing a tariff can actually increase the effective rate of protection for a domestic industry and to the value of exports or trade volume increase therefore the Lao government should find a way to negotiate to eliminate trade barriers between Laos and China, whether it is a customs wall or administrative barriers, including backward transportation systems. The results of this study also indicate that the inflation rate is related in the same direction to the export and contrary to the theory which may be the result of Laos facing both the inflation rate problem and the exchange rate increase during the same period, especially the exchange rate of kip to dollar, kip to yuan and kip to baht, etc. which makes it possible for importers to buy goods at a much cheaper price compared to the exchange rate. Therefore, policy makers should urgently solve the inflation problem.

5. Conclusion

The empirical analysis by OLS Robust model found that the per capita income is the most impact and has a one-way relationship with the export value of Lao PDR. It means that if other factors are assumed, when the per capita income of Chinese people increases by 1%, it will result in the export value of Lao PDR increasing by 3.01% in the same direction. Followed by the economic growth rate of Lao PDR. when the economic growth rate of Lao PDR increases by 1%, it will result in the value of its exports to China increasing by 0.13% in the same direction. The inflation rate of Lao PDR affects the export of Lao PDR to China in the same direction too, which means that, if the inflation rate of Lao PDR increases by 1%, it will result in the value of Lao PDR's exports to China increasing by about 0.01%. But on the other hand, it decreases by 1%, cause the value of its exports to China decreasing by 0.01% because Chinese feel that the goods are more expensive. However, the independent variables can explain the variables by 94%.

6. Conflict of Interest

We certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

7. Refferences

Amanbayev. (2017). What factors affect the export competitiveness? Malaysian evidence. Munich Personal RePEc Archive. MPRA Paper No. 102512.

Ayodotun, A. (2016). Modelling the determinants of import demand in Sub-Sahara Africa. Munich Personal RePEc Archive. No. 73225

B. Gururaj. (2016). Analysis of factors affecting the performance of exports in India. International Journal of Agriculture Environment and Biotechnology 9(4):613

Euis Eti Sumiyati. (2020). Factors affecting manufacturing exports. Journal of Economics Business and Accountancy Ventura 23(2):254-266.

Feder, Gershon. (1 9 8 3) . On exports and economic growth. Journal of Development Economics 12(1): 59-73.

Happy S. Mpunga. (2016). Examining the Factors Affecting Export Performance for Small and Medium Enterprises (SMEs) in Tanzania. Journal of Economics and Sustainable Development ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online) Vol.7, No.6, 2016.

Heller, H. R., & Khan, M. S. (1978). The Demand for International Reserves under Fixed and Floating Exchange Rates. Staff Papers (International Monetary Fund), 25(4), 623–649.

Landell-Mills. (1989). The demand for international reserves and their opportunity cost. Staff Papers-International Monetary Fund, 36(3), 708–736.

Naptania Ilmas, Mia Amelia and Rafli Risandi (2022). Analysis of the effects of inflation and exchange rate on exports in 5-years ASEAN countries (years 2010-2020). Jurnal Ekonomi Trisakti, Vol. 2 No.1, pp.121-132.

M. M, Rahman. (2010). The effecting of Bangladesh's exports: Evidence from the gravity model analysis. The Journal of Developing Areas, 44(1):229-244.

Reny & Agustina. (2014). The Influence of Exports, Imports, Rupiah Exchange Rate, and Inflation Rate on Indonesia's Foreign Exchange Reserves. Jurnal Wira Ekonomi Mikroskil, 4(2), 10.

Robert J. Sonora. (2008). On the impacts of economic freedom on international trade flows: Asymmetries and freedom components. Working Paper, 08-05.

S. Bakari, M. Mabroukib & A. Othmani. (2018). The six linkages between foreign direct investment, domestic investment, exports, imports, labor force and economic growth: New Empirical and Policy Analysis from Nigeria. Journal of Smart Economic Growth, vol. 2, No. 1, pp. 67-79.

Silviana. (2016). Analysis Of the influence of exchange rates and inflation on the trade balance in member countries of the Islamic cooperation organization. Universitas Islam Sunan Kalijaga: Yogyakarta.

Thorvaldor, G. (1997). Exports, Inflation and growth. Working Paper of International monetary fund.

Table 1: Factors affecting the exports of Laos to China

Independent Variables	**Models**	
	OLS	**OLS Robust**
$LnGDP_t$	1.307801 (2.40)**	1.307801 [.5066706]**
$LnUSD_t$	-.2201366 (-0.89)	-.2201366 [.4210701]
$LnFDI_t$	.1042915 (0.69)	.1042915 [.126758]
$LnInf_t$	.0144314 (2.25)**	.0144314 [.0026804]*
TF_t	.2296707 (2.56)**	.2296707 [.0719124]*
$Cons\_$	-23.4801 (-7.54)*	-23.4801 [5.873629]*
N	26	26
$F-test$	69.92	440.74
$P-value$	0.0000	0.0000
R^2	0.9459	0.9459
$Durbin's\ alternative\ test$	0.9074	

Breusch–Godfrey LM test	0.8919	
Jarque – Bera test	1.4e-06	0..45