Appendix 1 Previous Research

1. Research conducted by Tyanma Maygirtasari, Edy Yulianto, and Mukhamamad Kholid Mawardi in 2015 (Maygirtasari, 2015) on the analysis of factors affecting the export volume of Indonesian Crude Palm Oil (CPO) in 2009-2013. By using four independent variables, namely: Domestic CPO Production, Domestic CPO Prices, International CPO Prices, and Exchange Rate. This research is secondary data analysis in the form of time-series data from 2009-2013. The analytical tool used is multiple linear regression models. The test used is a statistical test which includes: t-test, F test, and R2.

   The results of the study show that the variables of Domestic CPO Production, Domestic CPO Prices, International CPO Prices, and the Rupiah Exchange Rate against the US Dollar have a combined effect on the Export Volume of Indonesian CPO based on the F Test, it is obtained a significant value of 0.00 or less than the significant level. Hinted (0.000 <0.05). The data analysis results show that there is a significant positive effect of Domestic CPO Production on Indonesia's CPO Export Volume. This positive influence can be said that if the Domestic CPO Production increases, then the Indonesian CPO Export Volume will also increase. Based on the results of the t-test, the hypothesis which states that there is a significant effect between Domestic CPO Production on Indonesia's CPO Export Volume, is partially acceptable.

   Based on the results of data analysis, it is known that there is a significant negative effect of domestic CPO prices on the export volume of Indonesian CPO. This negative influence can be said that if the Domestic CPO Price increases, the Indonesian CPO Export Volume will decline.

   Based on the results of data analysis, it is known that there is an insignificant positive effect of International CPO Prices on Indonesia's CPO Export Volume. This positive influence can be said that if the International CPO Price increases, the Indonesian CPO Export Volume will also increase. Based on the results of the t-test, the hypothesis which states that there is a significant effect between the International CPO Prices on the Export Volume of Indonesian CPO is partially rejected. This is because Indonesia's CPO Export Volume is more influenced by Domestic CPO Prices.

   Based on the results of data analysis, it is known that there is a significant positive effect of the Rupiah Exchange Rate on the Export Volume of Indonesian CPO. This positive effect can be said that if there is an increase in the Rupiah Exchange Rate against the US Dollar (appreciation), exports will also increase. Based on the t test results, the hypothesis that there is a significant effect between the Rupiah Exchange Rate against the US Dollar on the Export Volume of Indonesian CPO is partially accepted.

2. Dhany Surya Ratana, Noer Azam A, Trias Andati (Ekonomi & Keuangan, 2012) in a study entitled The Impact of Changes in Currency Exchange Rates on Indonesian Exports. In this study, there are three things discussed, including:
   a) The impact of exchange rate changes on the volume of aggregate exports and commodities of Indonesian CPO, coal, and rubber

b) Factors that affect the export of Indonesian CPO, rubber, and coal
c) The response of Indonesian exporters to variable shocks that influence it.

Data analysis methods used were VAR / VECM, impulse-response function, and fixed effects vector decomposition. The result of this research is that currency has a causal relationship with the production index and relative prices. Meanwhile, based on VECM analysis, the aggregate exchange rate model does not significantly affect exports, both in the long and short term. The variable that affects CPO exports in the short term is the export itself. In the long run, there is a positive relationship between export volume and rupiah depreciation and a negative relationship between export volume and relative prices.

3. Putri Daulika, Ke-Chung Peng, and Nuhfil Hanani (Daulika et al., 2020) about export competitiveness and factors were affecting Indonesia's natural rubber export price. This research analyzes two topics there are the factors that influence the price of Indonesian natural rubber export and the position of Indonesia's rubber competitiveness in comparative and international competitive advantages. This research using time series data is from 1995 to 2017. Data were analyzed using multiple linear regression to influence the price of Indonesian natural rubber export while analyzing Indonesian natural rubber's position competitiveness by using a revealed comparative advantage (RCA) and competitive advantage by using the Trade Specialization Index approach (TSI).

   The result of this study show:

   a) The factors that significantly affect Indonesia's natural rubber export are international rubber price, exchange rate, and domestic consumptions.
   b) Based on competitiveness analysis, Revealed Comparative Advantage (RCA) indicates that the competitiveness of Indonesia's natural rubber exports on the international market has a comparative advantage seen from 1995-2017 with an average value of RCA> 1, which is equal to 1.01.

Appendix 2 Operational Variable Definition

Variable	Variable Definition
Volume Export (Y)	Number of commodities sold in a certain period of time which is one of the determining factors that greatly affect the achievement of net profit, while profit or profit
Export Price (X1)	Amount of money that is billed for a product or service or the amount of value that is exchanged by consumers to benefit from owning or using a product and service. The price depends solely on the company (producer) policy but does not forget to pay attention to various aspects. The cheap or high price of a product depends on the product's specifications and advantages, which are very relative.
Exchange Rate (X2)	The exchange rate is the number of currency units that must be submitted to obtain one foreign currency unit. Foreign exchange rates show the price or value of a country's currency expressed in terms of another country's currency. Based on forex trading basics, it is stated that the exchange of one currency for another is called foreign exchange (forex). In general, foreign currency exchange rates can be interpreted as a foreign currency's price when exchanged for another currency.
GDP Importing Country US (X3)	Gross domestic product is the market value of all final goods and services produced by a country in its economy during a certain period. This gross domestic product is one of the indicators often used by economists to measure success in a country carrying out its economic activities.

Appendix 3 Data of Volume Essential Oils Export in Central Java, Export Price, Exchange Rate, and GDP Importing Country (US) 1990-2019

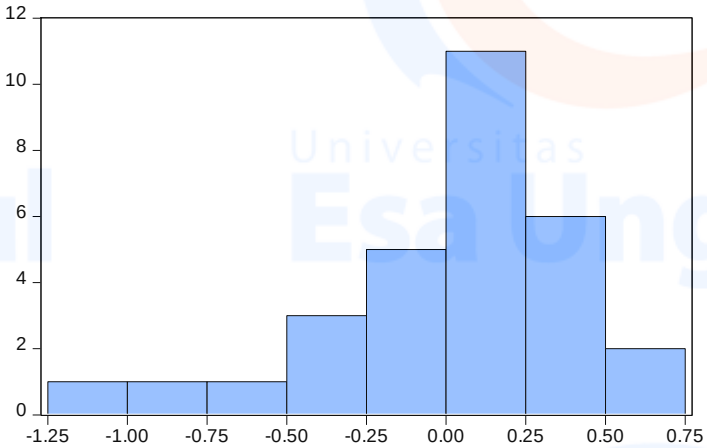
Year	Volume (Kg)	Export Price (USD/Kg)	Exchange Rate (Rp)	GDP US (Million USD)
1990	183844	4,095	1842	5963
1991	185668	4,097	1941	6158
1992	191422	4,142	2023	6520
1993	197226	4,22	2083	6859
1994	198542	4,285	2147	7287
1995	200500	4,43	2248	7640
1996	201141	4,713	2383	8073
1997	258266	4,364	4650	8578
1998	410812	3,472	8025	9063
1999	574377	1,869	7100	9631
2000	983767	2,942	9595	10252
2001	883039	5,808	10350	10582
2002	768289	4,843	9365	10936
2003	862468	3,772	8616	11458
2004	253639	4,863	8979	12214
2005	391420	3,298	9759	13037
2006	378701	4,01	9212	13815
2007	876137	2,938	9182	14452
2008	1121386	3,712	9728	14713
2009	1174863	5,291	10450	14449
2010	862425	5,252	9130	14992
2011	1633628	6,989	8823	15543
2012	2047482	5,608	9427	16197
2013	2339659	5,092	10504	16785
2014	2371639	6,907	11938	17527
2015	2267269	6,781	13459	18225
2016	2380586	6,33	13374	18715
2017	2700844	6,847	13451	19519
2018	4060349	8,49	14318	20580
2019	4384223	7,631	14275	21433

Appendix 4 Data After Log of Volume Essential Oils Export in Central Java, Export Price, Exchange Rate, and GDP Importing Country (US) 1990-2019

YEAR	LVOL	LPRICE	LRATE	LGDP
1990	1.212.184.285.089.630	1.409.766.717.305.030	7.518.607.216.815.250	8.693.328.989.123.100
1991	1.213.171.541.154.400	1.410.254.998.564.730	757.095.858.316.901	8.725.507.328.484.440
1992	1.216.223.569.392.430	1.421.178.762.973.390	7.612.336.837.167.740	8.782.629.654.920.690
1993	1.219.210.555.830.150	143.983.512.804.792	7.641.564.441.260.970	8.833.316.937.499.320
1994	1.219.875.594.362.970	1.454.887.152.585.500	7.671.826.797.878.780	8.893.847.217.670.280
1995	1.220.856.952.572.870	1.488.173.824.941.060	7.717.796.211.013.580	8.941.152.882.160.560
1996	1.221.176.143.364.760	1.550.324.647.941.590	7.776.115.477.098.740	8.996.280.439.395.010
1997	1.246.174.534.053.220	1.473.389.067.970.820	8.444.622.498.581.400	9.056.956.065.076.820
1998	1.292.589.096.790.490	1.244.730.796.798.100	8.990.316.947.998.210	9.111.955.470.054.780
1999	1.326.104.125.413.170	0.6254035284734258	8.867.850.063.029.400	9.172.742.341.560.860
2000	1.379.914.435.937.760	1.079.089.622.179.240	91.689.974.084.418	9.235.228.087.483.960
2001	1.369.112.464.622.110	1.759.236.277.522.490	9.244.741.798.693.510	9.266.909.723.464.070
2002	1.355.192.124.342.920	1.577.534.363.421.090	9.144.734.614.878.180	9.299.815.378.403.780
2003	136.675.533.257.501	1.327.605.364.771.210	9.061.376.218.836.220	9.346.443.454.968.520
2004	1.244.366.727.521.030	1.581.655.531.421.640	9.102.643.796.520.800	941.033.811.378.308
2005	1.287.753.643.125.890	1.193.316.224.137.400	918.594.521.514.146	9.475.546.747.662.770
2006	1.284.450.225.449.900	1.388.791.241.318.470	9.128.262.260.940.570	9.533.510.237.357.510
2007	1.368.327.775.038.450	1.077.729.077.751.680	9.125.000.324.809.160	957.858.809.226.753
2008	1.393.007.597.819.920	1.311.570.814.923.950	9.182.763.604.205.940	9.596.486.735.697.940
2009	139.766.621.030.179	1.666.007.263.921.990	9.254.357.257.392.950	9.578.380.486.993.610
2010	1.366.750.346.758.490	165.860.895.644.055	9.119.320.973.589.010	9.615.272.004.478.200
2011	1.430.631.386.630.440	1.944.337.484.494.990	9.085.117.227.222.100	9.651.365.655.482.890
2012	1.453.212.130.346.190	1.724.194.149.732.280	915.133.319.139.615	9.692.581.318.886.390
2013	1.466.551.575.021.900	162.767.068.069.516	9.259.511.415.982.630	9.728.240.909.414.130
2014	1.467.909.183.527.450	1.932.535.390.106.830	9.387.481.868.728.590	9.771.497.828.073.170
2015	1.463.408.658.147.090	1.914.124.583.701.700	9.507.403.306.233.710	9.810.549.556.876.850
2016	1.468.285.723.382.820	1.845.300.236.156.080	9.501.067.802.613.920	9.837.080.620.338.520
2017	1.480.907.487.472.020	1.923.810.600.138.920	9.506.808.731.708.580	9.879.143.629.146.610
2018	1.521.677.948.847.460	2.138.889.000.323.250	956.927.276.595.613	993.207.500.938.804
2019	1.529.352.297.310.460	2.032.218.898.307.490	956.626.503.452.421	9.972.687.069.337.130

Appendix 5 Result Classic Assumption Test Result

Normality Test Result



Series: Residuals
Sample 1990 2019
Observations 30

Mean	-1.78e-15
Median	0.068839
Maximum	0.644801
Minimum	-1.214038
Std. Dev.	0.401474
Skewness	-1.337162
Kurtosis	4.917118
Jarque-Bera	13.53419
Probability	0.001151

Multicollinierity Test Result

Variance Inflation Factors
Date: 05/31/21 Time: 08:55
Sample: 1990 2019
Included observations: 30

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	10.42645	1739.872	NA
LPRICE	0.108058	44.65921	1.853869
LRATE	0.093097	1220.222	7.450747
LGDP	0.392045	5766.315	9.490921

Heterokedasticity Test Result

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.906306	Prob. F(3,26)	0.4515
Obs*R-squared	2.840203	Prob. Chi-Square(3)	0.4169
Scaled explained SS	4.178209	Prob. Chi-Square(3)	0.2429

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 05/31/21 Time: 08:57
Sample: 1990 2019

Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.338389	2.400217	0.140983	0.8890
LPRICE	-0.220054	0.244350	-0.900569	0.3761
LRATE	0.174074	0.226804	0.767506	0.4497
LGDP	-0.147278	0.465426	-0.316436	0.7542

R-squared	0.094673	Mean dependent var	0.155809
Adjusted R-squared	-0.009787	S.D. dependent var	0.313644
S.E. of regression	0.315175	Akaike info criterion	0.652191
Sum squared resid	2.582724	Schwarz criterion	0.839017
Log likelihood	-5.782866	Hannan-Quinn criter.	0.711958
F-statistic	0.906306	Durbin-Watson stat	1.746635
Prob(F-statistic)	0.451476		

Autocorrelation Test Result

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.054776	Prob. F(2,23)	0.9468
Obs*R-squared	0.137476	Prob. Chi-Square(2)	0.9336

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 05/31/21 Time: 08:58
Sample: 1991 2019
Included observations: 29
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.038847	0.253583	0.153193	0.8796
D(LPRICE)	0.014540	0.288666	0.050368	0.9603
D(LRATE)	0.014109	0.425337	0.033171	0.9738
D(LGDP)	-0.919587	5.721748	-0.160718	0.8737
RESID(-1)	-0.076250	0.239288	-0.318655	0.7529
RESID(-2)	-0.045028	0.273290	-0.164762	0.8706

R-squared	0.004741	Mean dependent var	-1.24E-17
Adjusted R-squared	-0.211620	S.D. dependent var	0.331424
S.E. of regression	0.364810	Akaike info criterion	1.003112
Sum squared resid	3.060988	Schwarz criterion	1.286001
Log likelihood	-8.545125	Hannan-Quinn criter.	1.091709
F-statistic	0.021910	Durbin-Watson stat	1.998900
Prob(F-statistic)	0.999765		

Appendix 6 Result Multiple Linear Regression Test

Dependent Variable: VOLUME
Method: Least Squares
Date: 05/16/21 Time: 13:37
Sample: 1990 2019
Included observations: 30

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2132413.	307657.0	-6.931137	0.0000
PRICE	254.3439	84.81040	2.998971	0.0059
EXCHANGE RATE	0.537254	58.10473	0.009246	0.9927
GDP	162.0449	59.02815	2.745214	0.0108

R-squared	0.848429	Mean dependent var	1178120.
Adjusted R-squared	0.830940	S.D. dependent var	1152984.
S.E. of regression	474071.6	Akaike info criterion	29.09967
Sum squared resid	5.84E+12	Schwarz criterion	29.28650
Log likelihood	-432.4951	Hannan-Quinn criter.	29.15944
F-statistic	48.51216	Durbin-Watson stat	0.842962
Prob(F-statistic)	0.000000		