Do The Petroleum Production, Exports and Imports Have an Impact on Development on Several Developing Asian Countries Compared with Developing European and American Countries on Statistical Differences for The Theory of International Trade?

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Abstract: This research aims to determine the influence of petroleum production in several developing countries in Asia compared to developed countries in Europe and America on exports and imports for the 2016-2020 period. Petroleum production in this study is measured by the volume of petroleum production, exports and imports each year. This research was conducted in Developing Asian Countries and Developed European and American Countries. Purposive sampling of 5 countries with research for the 2016-2020 period. This research data is secondary data from statement reports from 5 countries published in The JODI Gas World Database. This research data processing method uses Descriptive Statistics Test, Classical Assumption Test, Linear Regression Test using EViews. Based on the research results, it was obtained: (1) The petroleum production variable has a negative and insignificant effect on statistical differences, (2) The petroleum import variable has a positive and significant influence on statistical differences, (3) The petroleum export variable has a negative and insignificant effect on statistical differences.

Keywords : International Trade, Production, Import, Export, Statistical difference.

JEL Code Classification: N75, O13, P28, Q43.

1. INTRODUCTION

International trade plays an important role in meeting the needs of countries around the world (Wang & Zhang, 2023). The occurrence of international currency trading is necessary. International trade is defined as trade between countries, including exports and imports (Alifyantari, 2018). International trade is important for a country's economy to improve the welfare of its people. International trade plays an important role because a country cannot fulfill all its internal needs (Alifyantari, 2018). International trade includes export and import activities carried out by people in the era of globalization to meet their daily needs. Exports and imports are one of the most important activities in the country's economy (Cui et al., 2022). Foreign exchange generated from export activities is used to finance imports of raw materials and capital goods in the production process to create added value. International trade can become a problem for the Indonesian government if consumption of goods or services exceeds the budget set by the government each year, giving rise to new problems facing Indonesia (Alifyantari, 2018). With international trade, any country in the world can exchange resources from any country with the aim that there is no surplus or shortage of resources in any country in the world which is characterized by international trade. Modern theory argues that the relative difference between factor supply and intensity use in production causes international trade (Alifyantari, 2018, Rahman et al., 2022).

The ability of a country to produce as many units of goods and services with fewer resources than other countries is an absolute asset. The absolute advantage that a country has will not always export all the goods it produces (Alifyantari, 2018). Petroleum is one of the raw materials exported and imported in Indonesia, because oil is one of the main energies used in almost all countries (Muda et al., 2020, Sharma & Shrestha, 2023). Indonesia is a member of OPEC (Organization of the Petroleum Exporting Countries), which is one of the largest oil exporters in the world. Since 2000, oil production in Indonesia can no longer meet demand and has become a net importer of oil. As time went by, oil production decreased compared to the previous year, inversely proportional to the size, domestic consumption increased from year to year, so that Indonesia had to leave OPEC in 1 year (Ghufron, 2020).

Petroleum is one of the most important raw materials that Indonesia imports from year to year and relatively high oil imports followed by a decline in production is a problem for

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Indonesia because the Indonesian government is obliged to control oil consumption in Indonesia by covering it with oil imports from other countries and that imports Petroleum has a negative relationship with the demand side of world oil prices (Ghufron, 2020, Waqqosh et al., 2021). Oil from the international market, which Indonesia buys due to declining production conditions so that the Indonesian government has to buy oil at prices that cannot be contested and world oil prices are influenced by the willingness and availability of supplies from oil producing countries. The largest producing countries to become oil suppliers are the Middle East, the United States and Russia. Matters in terms of supply availability and geopolitical conditions in supplier countries influence petroleum prices in various countries, not only in Indonesia ((Ghufron, 2020). Of course, in meeting world oil needs, oil exporting countries have huge advantages, but in implementation different problems arise, so that both oil exporting countries and oil importing countries have different problems (Kumar & Barua, 2023). Problems that can arise, such as unorganized oil supply, uneven oil prices from each exporter, different needs of importers and many more.

2. LITERATURE REVIEW

2.1. Production

The word production is a loan word in English, namely production. In the Big Indonesian Dictionary, the word production is defined as the process of generating income. There are also two other meanings of production, namely results and creation. The definition of production includes all activities, including processes that can produce output, income and manufacturing (Muin, 2020). Production is an activity to increase the added value of an item by bringing together various production factors (Muin, 2020). Productive activity is a product which is defined as: goods or services, which are produced and whose use or value is added in the production process (Muin, 2020).

2.2. The Theory of International Trade

International Trade Theory was initiated by Hecskher (1919) and Bertil Ohlin (1933) which explained trade international issues that have not been able to be explained in the theory of comparative advantage. The classical theory of comparative advantage explains that international trade can occur because of differences in the productivity of labor (production factors that are explicitly stated) between countries (Salvatore, 2007). However, this theory does not provide an explanation of the causes of these differences in productivity. The trade theory put forward by Eli Heckscher and Bertil Ohlin (Heckscher-Ohlin), is a development of the theory of absolute advantage and the theory of comparative advantage. Foreign trade is a commercial activity between countries where goods are exchanged between them. Sending goods to a country by a country because there is demand from buyers in that country or not is called export trade (Risa, 2018). The export regulations issued by the Government through the Ministry of Trade are: First: Determining commodities that are prohibited from export and those that are allowed/permitted to be exported. Second: commodities that can be exported are divided into: (1). Export commodities whose exports are monitored. example|: Weapons and equipment for the armed forces. (2) Export commodities whose quality control is implemented. This shows a quality certificate of guarantee. (3). Commodities whose trading system is regulated, where export commodities can only be exported by registered exporters. (4). Exported commodities that must be inspected by a surveyor, where the raw materials come from abroad or the exported goods are subject to export tax. Third: Export destination country. Basically, export trade can be carried out to all countries that have trade relations.

2.3. Import

Imports are interpreted as the import of goods into the country from abroad, or it could also be said that imports are an activity in trade through the purchase of goods from abroad which are sent into the country (Risa, 2018).

3. METHODS

This research is classified as causal research. Causal research is research conducted to compare variables (research objects) between different subjects and find causal relationships without dealing with existing variables (Ibrahim et al., 2018). This research uses a sample of several countries including Canada, Indonesia, Malaysia, Thailand, the United States of America for the period January 2016-December 2020, namely five countries in each category based on data available on The Jodi Gas. The population of this study is Canada, Indonesia, Malaysia, Thailand, and the United States of America.

Sample selection is included in the purposive sampling criteria, which are as follows:

1. The countries selected accordingly are Canada, Indonesia, Malaysia, Thailand, United States of America.

2. Highlight financial reports and financial variables that are equipped with variables in the research, namely those that will be observed throughout the observation.

Based on this, a sample was obtained with a total of 5 countries for each category from the total. The data analysis methods used are descriptive statistics, multiple regression analysis, and classical assumptions. Descriptive statistics are statistics used to analyze data by describing or illustrating the data that has been collected as it is without the intention of making general conclusions or generalizations (Ibrahim et al., 2018). Regression analysis in panel data can be carried out with three models, including common effect, fixed effect and random effect. Regression analysis is basically about the dependence of a dependent (dependent) variable on one or more independent variables (independent variables), with the aim of estimating and/or predicting the population average or average value of the dependent variable based on the known value of the independent variable (Ibrahim et al. al., 2018). The results of the regression analysis are in the form of coefficients for each known independent variable. The choice of panel data estimation model in this research is the Chow Test and the Hausman Test. The Chow test is used to choose

Table 1. Descriptive Statistics Test Results.

-	Y	C	X_1	X_2	X_3
Mean	-34.30801	1.000000	3114.857	1881.029	1100.570
Median	0	1.000000	763.9775	749.2953	338.0037
Maximum	1067.021	1.000000	12966.13	8480.233	3707.759
Minimum	-776.5000	1.000000	0.000000	0.000000	0.000000
Std. Dev.	197.6605	NA	3945.089	2731.09	1289.765
Skewness	-0.067473	NA	1.310861	1.52663	0.786996
Kurtosis	8.799757	NA	3.204065	3.5018	1.813586
Jarque-Bera	420.6924	NA	86.43837	119.6775	48.56284
Probability	0.000000	NA	0.000000	0.000000	0.000000
Sum	-10292.40	300.0000	934457.0	564308.7	330170.9
Sum Sq. Dev.	11681838	0.000000	4.65E+C9	2.23E+09	4.97E+08
Observation	300	300	300	300	300

Data source: Author processed data using Eviews (Output Eviews 12).

between CEM and FEM while the Hausman test is used to choose between FEM or REM. The purpose of the normality test is to test whether the nuisance or residual variables in the regression model are normally distributed. To see whether the residuals are normally distributed or not, the Jarque-Bera (Wicaksono, n.d.) values are compared with the X^2 table. If the significance or probability value is > 0.05 then the data is said to be normally distributed.

If significance value or probability value is applied; 0.05, then the data is not normally distributed (Ibrahim et al., 2018). The multicollinearity test is intended to test whether the regression model has found a correlation between independent variables (Ibrahim et al., 2018). The multicollinearity test can be seen from the tolerance value and variance inflation factor (VIF). Multicollinearity can be recognized by a cutoff value that has a tolerance value > 0.1 or the same as the VIF ylt value; 10. The heteroscedasticity test aims to test whether there is an inequality of variance in the regression model between the residuals of one observation and another observation. If the significance value is > 0.05 then heteroscedasticity does not occur in the regression model (Ghozali, 2018: 137). The regression equation used in this research is:

$Y = + X_1 + X_2 + X_3 + e$

Y = Statistical Production; = Constant; = Regression coefficient;

X_1 = Production;

X_2 = Import;

X_3= Exsport;

e = Error Term, namely the level of estimator error in research

4. RESULT AND DISCUSSION

4.1. Result

4.1.1. Descriptive Statistical Test

1. Petroleum production (X_1) has a minimum value of 0.000000 and a maximum value of 12966.13, where the average petroleum production (X_1) during 2016-2020 from several countries is 3114.857 with a standard deviation of 3945.089. The mean value is smaller than the standard deviation which indicates that the mean value is a poor representation of the overall data.
2. Imports (X_2) have a minimum value of 0.000000 and a maximum value of 8480,233, where the average import (X_2) during 2016-2020 from several countries was 1881,029 with a standard deviation of 2731,090. The mean value is smaller than the standard deviation which indicates that the mean value is a poor representation of the overall data.
3. Exports (X_3) have a minimum value of 0.000000 and a maximum value of 3707,759, where the average import (X_3) during 2016-2020 from several countries was 1100,570 with a standard deviation of 1289,765. The mean value is greater than the standard deviation, which shows that the mean value is a good representation of the entire data.
4. Statistical Difference (Y) has a minimum value of -776.5000 and a maximum value of 1067.021, where the average statistical difference (Y) during 2016-2020 is -34.30801 with a standard deviation of 197.6605. The mean value is smaller than the

Table 2. Common Effect Model (CEM) Test Results.

Dependent Variable: Y				
Method: Panel Least Squares				
Sample: 2016M01-2020M012				
Included observations: 60				
Cross Section Included : 5				
Total Panel (balanced) Observations : 300				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-0.683903	12.93100	-0.052889	0.95790
X1	-0.094717	0.012958	-7.309683	0.00000
X2	0.700388	0.015528	4.532972	0.00000
X3	0.117216	0.015999	7.326409	0.00000
R-squared	0.395440	Mean dependent var	-	-34.30801
Adjusted R-sauarect	0.389312	S.D. dependent var	-	197.6605
S.E.of regression	154.4648	Akaike info criterion	-	12.93105
Sum squared resid	7062375	Schwarz criterion	-	12.98044
Log likelihood	-1935.658	Hannan-Quinn criter.	-	12.95082
F-statistic	64.53736	Durbin-Watson stat	-	1.80083
Prob(F-statistic)	0.000000	-	-	-

Data source: Author processed data using Eviews (Output Eviews 12).

standard deviation which indicates that the mean value is a poor representation of the overall data.

4.1.2. Panel Data Regression Model

Regression analysis in panel data can be carried out with three models, including common effect, fixed effect and random effect, so that it can be seen which method is best to use in estimating the factors that influence Statistical Difference (Y).

a. Common Effect Model (CEM)

The Common Effect Model (CEM) only combines time series and cross section data using the OLS method. This combined data is considered as a single observation which is used to estimate the model using the OLS method.

$Y = -0.683903 - 0.094717\ X_1 + 0.070388\ X_2 + 0.117216\ X_3 + e$

The regression equation above shows that the constant is -0.683903. The regression coefficient for Production (X1) is -0.094717, Imports (X2) is 0.070388 and exports (X3) is 0.117216. One variable with an individual test (t-test probability) looks significant at $\alpha = 5\%$ and the adjusted R2 value is 0.0389312 with a Durbin-Watson stat value of 1.800830 which is low (far from the range of number 2) or indicates that there is still doubt about the existence of an autocorrelation problem. This method assumes that values between individuals are considered the same, which is a very limiting assumption (Damodar N Gujarti, 2006:53). So this common effects model cannot capture the true picture of the influence that occurs between the independent variable and the dependent variable, as well as the relationship between each individual cross section. Likewise, as explained in the theoretical selection method, the common effect method is too simple to describe existing phenomena.

b. Fixed Effect Model (FEM)

T > N = FEM

FEM is used if the amount of time (T) is greater than the observation (N). From the data above, it can be seen that the data for the amount of time in this study, namely 60, means it is greater than the observation (N), which is 5. Where the time period (T) = 5 years (1 year consists of 12 months so 12 times 5 gets 60) and Observations (N) = 5 countries (Canada, Indonesia, Malaysia, Thailand, United States of America). Based on the multiple linear regression model table for the Fixed Effect Model (FEM) model

$Y = 38.33.891 - 0.013178\ X_1 + 0.032788\ X_2 - 0.084750\ X_3 + e$

The regression equation above shows that the constant is 38,33,891. The regression coefficient for Production (X1) is -0.013178, Imports (X2) is 0.032788 and exports (X3) is -0.084750 and the adjusted R-square (R2) coefficient of determination is 0.483545. R2 is very useful for measuring the closeness between predicted values and actual values. The greater R2, the greater (stronger) the relationship between

Table 3. Fixed Effect Model (FEM) Test Results.

Dependent Variable: Y				
Method: Panel Least Squares				
Sample: 2016M01-2020M012				
Included observations: 60				
Cross Section Included : 5				
Total Panel (balanced) Observations : 300				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	38.33891	82.810680	0.462971	0.6437
X1	-0.001318	0.028370	-0.464513	0.6426
X2	0.032788	0.031071	1.055525	0.2922
X3	-0.084750	0.045354	-1.868661	0.0627
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.495636	Mean dependent var		-34.30801
Adjusted R-sauarect	0.483545	S.D. dependent var		197.6605
S.E.of regression	142.0484	Akaike info criterion		12.77652
Sum squared resid	5891904	Schwarz criterion		12.87529
Log likelihood	-1908.478	Hannan-Quinn criter.		12.81604
F-statistic	40.99234	Durbin-Watson stat		2.045070
Prob(F-statistic)	0.000000	-	-	-

Data source: Author processed data using Eviews (Output Eviews 12).

the dependent variable and one or many independent variables.

c. Random Effect Model (REM)

T < N = REM

REM is used if the amount of time (T) is smaller than the observation (N). From the data above, it can be seen that the data for the amount of time in this study, namely 60, means it is smaller than the observation (N), which is 5. Where the time period (T) = 5 years (1 year consists of 12 months so 12 times 5 gets 60) and Observations (N) = 5 countries (Canada, Indonesia, Malaysia, Thailand, United States of America).

Based on the multiple linear regression model table for the Random Effect Model

$Y = -0.683903-0.094717\ X_1+0.070388X_2+0.117216\ X_3+ e$

The regression equation above shows that the constant is -0.683903. The regression coefficient for Production (X1) is -0.094717, Imports (X2) is 0.070388 and exports (X3) is 0.117216 and the adjusted R-square (R2) coefficient of determination is 0.389312. R2 is very useful for measuring the closeness between predicted values and actual values. The greater R2, the greater (stronger) the relationship between the dependent variable and one or many independent variables

4.1.3. Selection of Panel Data Regression Models

1. Chow Test

The Chow test is carried out to determine whether the Common Effect model is better to use than the Fixed Effect model. Testing was carried out using the F statistical test or chi-square and the hypothesis used was as follows:

1. Ho: the model follows the common effect model.

2. Ha: the model follows the fixed effect model.

With conditions, including:

1. Prob cross section F < 0.05, Ho is rejected and Ha is accepted.

2. Prob cross section F > 0.05, Ha is rejected and H0 is accepted

From the Chow test output above, the significant level of Cross-Section F is 0.0000. The significance level is smaller than 0.05, which means that Hypothesis H0 is rejected so it can be concluded that the Fixed Effect method is a more suitable analysis method to use.

2. Haussman Test

Table 4. Random Effect Model (REM) Test Results.

Dependent Variable: Y				
Method: Panel EGLS (Cross-section random effects)				
Sample: 2016M01-2020M012				
Included observations: 60				
Cross Section Included : 5				
Total Panel (balanced) Observations : 300				
Swamy and Arora estimator of component variances				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-0.683903	12.93100	-0.052889	0.95790
X1	-0.094717	0.012958	-7.309683	0.00000
X2	0.700388	0.015528	4.532972	0.00000
X3	0.117216	0.015999	7.326409	0.00000
Effects Specification				
-	-	-	S.D.	Rho
Cross-section random	-	-	0.000000	0.0000
Idiosyncratic random	-	-	142.0484	1.0000
Weight Statistics				
R-squared	0.395440	Mean dependent var	-	-34.30801
Adjusted R-sauarect	0.389312	S.D. dependent var	-	197.6605
S.E.of regression	154.4648	Sum squared resid	-	7062375
F-statistic	64.53736	Durbin-Watson stat	-	1.800830
Prob(F-statistic)	0.000000	-	-	-
Unweighted Statistics				
R-squared	0.395440	Mean dependent var	-	-34.30801
Sum squared resid	7062375	Durbin-Watson stat	-	1.800830

Data source: Author processed data using Eviews (Output Eviews 12).

Table 5. Chow Test Results.

Redundant Fixed Effects Tests			
Equation : Untitled			
Test Cross-section fixed effects			
Effects Test	**Statistic**	**d.f.**	**Prob**
Cross-section F	14.501994	(4,292)	0.0000
Cross-section Chi-square	54.360643	4	0.0000

Data source: Author processed data using Eviews (Output Eviews 12).

The Hausman test is carried out to determine which model is more appropriate to use, namely the Random Effect Model or the Fixed Effect Model. The hypothesis in this test is as follows:

1. Ho: the model follows the Random Effect Model.
2. Ha: the model follows the Fixed Effect Model.

With conditions, including:

Series: Standardized Residuals	
Sample 2016M01-2020M12	
Observations 300	
Mean	-8.15E-15
Median	-4.129467
Maximum	1062.760
Minimum	-447.7029
Std. Dev.	140.3758
Skewness	2.245584
Kurtosis	17.96843
Jarque-Bera	3052.807
Probability	0.000000

Data source: Author processed data using Eviews (Output Eviews 12).

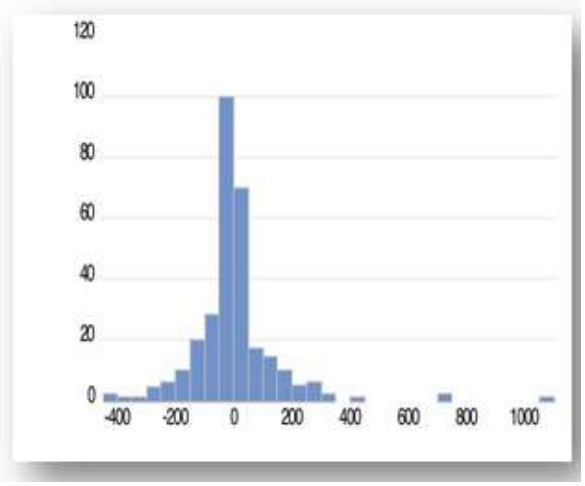

Fig. (1). Normality Histogram.

1. Random cross section probability <0.05, then Ho is rejected and Ha is accepted.

2. Random cross section probability > 0.05, then Ha is rejected and H0 is accepted

Table 6. Hausman Test Results.

Correlated Random Effects-Hausman Test			
Equation : Untitled			
Test cross-section random effects			
Test Summary	**Chi-sq Statistic**	**Chiq-Sq. d.f.**	**Prob**
Cross-section Random	57.727677	3	0.0000

Data source: Author processed data using Eviews (Output Eviews 12)

From the output of the Hausman test, the significant level of Cross-Section F is 0.0000. The significance level is smaller than 0.05, which means that the H0 hypothesis is rejected so it can be concluded that the Fixed Effect method is a more suitable analysis method to use. From the two tests above, it shows that the FEM model is the most suitable model. So next, a classical assumption test for the FEM model is carried out.

4.1.4. Classic Assumption Test

1. Normality Test

H0 = If the probability value is > 0.05 then it can be said that the residual is normally distributed.

H1 = If the probability value is <0.05 then it can be said that the residual is distributed abnormally.

Based on the picture above, the jarque fall value is 3052.807 and the probability value is 0.000000 < 0.05. From these results, the jarque fallout value of the research variables in the research observed has a significant value below 0.05, so the data is not normally distributed.

1. Multicollinearity Test

Table 7. Multicollinearity Test Results.

-	**X1**	**X2**	**X3**
X1	1.000000	0.92403322	0.61859549
X2	0.92403322	1.000000	0.32092258
X3	0.61859549	0.32092258	1.000000

Data source: Author processed data using Eviews (Output Eviews 12).

The Table multicollinearity test results are the test results of the estimation of the equation of the independent variables. Data can be said to be free from multicollinearity symptoms if the correlation value between independent variables is smaller than 0.8 (correlation < 0.8).

From the output of the multicollinearity test above, the correlation value between the independent variables (petroleum production, imports, exports) is obtained, where the independent variable production (X1) is more than 0.8, so it can be concluded that multicollinearity has occurred.

1. Heteroscedasticity Test

Based on the table above, the probability value for each independent variable has a probability value smaller than 0.05, so it can be concluded that heteroscedasticity occurs.

4.2. Discussion

4.2.1. Effect of Petroleum Production on Statistical Differences

From the tests that have been carried out, the results obtained for the petroleum production variable are statistical differences with a coefficient value of -0.013178. which explains that for every 1 unit increase in petroleum production, the statistical difference will decrease by 0.013178. Judging from the resulting probability value of 0.6426 which is

Table 8. Heteroscedasticity Test Results.

Dependent Variabel : RESABS				
Method: Panel Least Squares				
Sample: 2016M01-2020M012				
Included observations: 60				
Cross Section Included : 5				
Total Panel (balanced) Observations : 300				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	21.05593	8.620426	2.442563	0.0152
X1	-0.033770	0.008638	-3909358	0.0001
X2	0.051701	0.010352	4.994467	0.0000
X3	0.059108	0.010666	5.541841	0.0000
R-squared	0.226685	Mean dependent var	-	78.17073
Adjusted R-sauarect	0.218847	S.D. dependent var	-	116.5086
S.E.of regression	102.9737	Akaike info criterion	-	12.12007
Sum squared resid	3138658	Schwarz criterion	-	12.16945
Log likelihood	-1814.010	Hannan-Quinn criter.	-	12.13983
F-statistic	28.92257	Durbin-Watson stat	-	1.934967
Prob(F-statistic)	0.000000	-	-	-

Data source: Author processed data using Eviews (Output Eviews 12)

greater than 0.05, it can be concluded that the petroleum production variable has a negative and insignificant effect on the statistical difference.

4.2.2. Effect of Petroleum Imports on Statistical Differences

From the tests that have been carried out, results were obtained for the import variable on statistical differences with a coefficient value of 0.032788, showing a positive number, which means that imports are positively related to statistical differences. A positive value means that when there is an increase in petroleum imports it will increase the statistical difference and vice versa if there is a decrease in petroleum imports it will reduce the statistical difference. Judging from the resulting probability value of 0.2922 which is smaller than 0.05, it can be concluded that the petroleum import variable has a positive and significant effect on the statistical difference.

4.2.3. Effect of Petroleum Exports on Statistical Differences

From the tests that have been carried out, results were obtained for the petroleum export variable for statistical differences with a coefficient value of -0.084750, which explains that for every 1 unit increase in petroleum production, the statistical difference will decrease by 0.084750. Judging from the resulting probability value of 0.0627 which is greater than 0.05, it can be concluded that the petroleum export variable has a negative and insignificant effect on the statistical difference.

5. CONCLUSSION AND SUGGESTION

5.1. Conclusion

Based on the results of the analysis and discussion that have been explained, the following conclusions can be drawn:

1. International trade has a very important meaning for a country. Through international trade, many benefits can be achieved, both direct and indirect. The direct benefits of international trade include specialization, a country can export production commodities to be exchanged for what other countries produce at lower costs. The country will gain direct benefits through an increase in national income and will ultimately increase the rate of output and economic growth. These results support the International Trade Theory initiated by Hecskher (1919) and Bertil Ohlin (1933).
2. Petroleum production has a negative and insignificant effect on statistical differences. Because if you look at the resulting probability value of 0.6426, it is greater than 0.05 and the results obtained for the

production variable for statistical differences with a coefficient value of -0.013178

3. Petroleum imports have a positive and significant effect on statistical differences. Because if you look at the resulting probability value of 0.2922, it is smaller than 0.05 and the results obtained for the import variable for statistical differences with a coefficient value of 0.032788
4. Petroleum exports have a negative and insignificant effect on statistical differences. Because if you look at the resulting probability value of 0.0627 it is greater than 0.05 and if you look at the resulting probability value it is 0.0627 it is greater than 0.05.
5. Production, import and export of petroleum together influence statistical differences in the countries Canada, Indonesia, Malaysia, Thailand and the United States of America.

5.2. Suggestion

Suggestions that researchers can give in accordance with the conclusions and limitations of the research previously explained for the future researchers who wish to research the same research, they can deepen their research by looking for a wider research sample such as from outside the country of manufacture, adding dependent variables and independent variables, and increasing the number of observation periods.. Practically, this research is also expected to be an input for countries that are the object of research in carrying out activities. Exports and imports play a big role in each country's trade balance.

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