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THE INFLUENCE OF MANUFACTURING PRODUCTS, EXCHANGE RATE AND INFLATION RATE ON EXPORTS TO THE ASEAN REGION FOR THE 2017-2021 PERIOD

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ABSTRACT

This study aims to determine the effect of manufactured products, exchange rates, and inflation rates on exports in the ASEAN Region for the 2017-2021 period. This study uses panel data from 6 countries in the ASEAN Region, namely Indonesia, Singapore, Malaysia, Thailand, Vietnam and the Philippines and in the period 2017-2021. The data used is secondary data from the World Bank and trade economics. This study is a quantitative study using panel data, the data used are time series (2017-2021) and cross sections (6 ASEAN countries namely Singapore, Malaysia, Thailand, Indonesia, Philippines and Vietnam). The analytical method used in this research is multiple linear regression analysis. The results of the research found on the variables and within that time period it was found that manufactured products have a positive and significant influence on exports in the ASEAN region. Inflation has a negative and significant effect on exports in the ASEAN Region. The exchange rate and inflation have a positive and significant effect on exports in the ASEAN Region and Inflation has a negative but not significant effect on exports in the ASEAN Region in the 2017-2021 period.

Keywords: Exports, Manufactured Products, Exchange Rates, Inflation.

BACKGROUND

The existence of continuous growth in countries in the world is an indication that there has been a change in the realm of globalization. The flow of globalization has resulted in the loss of a boundary between countries (Paulus, 2016). Globalization that occurs in each country covers various sectors, one of which is in the economic sector which is used as one of the parameters for categorizing developed or developing countries. Globalization that occurs in the economic sector has a positive impact on several countries, one of which is related to the ease of access of a country in conducting international trade (Priyono, 2018). International trade includes two activities, namely export and trade import. Export is an activity of sending and selling goods

abroad while import is defined as an economic activity by buying products from foreign markets (Mankiw and Gregory, 2006).

International trade activities, both exports and imports, have an important role in supporting the economic sector of a country. Export activities carried out by a country are primarily aimed at expanding foreign markets. This is done with the aim that the products produced in the country are not only known by the residents themselves but can also be recognized by residents abroad. Transactions from the results of export activities carried out by a country have a positive impact, one of which is to increase the country's foreign exchange as a source of a country's revenue (Igir, et al., 2020). There is an urgency in a country to increase foreign exchange, so export activities are chosen to increase the country's economic growth.

International trade activities involving between countries do not just happen, in international trade activities there is a protection to avoid domination of the domestic market from foreign goods in the form of tariffs. The determination of this tariff is categorized as a separate obstacle in international trade activities, especially in export activities. The obstacles experienced by each country in the implementation of international trade can basically be minimized by involving a form of cooperation between the countries involved. This cooperation activity is generally influenced by which countries are involved and the location of the region of a country, if trading partners are considered promising, then this is believed to provide benefits for countries involved in cooperation in international trade activities (Mayadewi & Purwanti P. A, 2012). The benefits that can be felt are mainly in terms of supporting increasing national income and expanding the market (Nopirin, 2012). With this collaboration, it will make it easier for the country to carry out the negotiation process in an effort to minimize things that are considered an obstacle in the process of implementing international trade (Mboy & Setiawan, 2019).

One form of cooperative organization that focuses on freedom in the implementation of international trade with policies in it, one of which is the elimination of 0-5% tariffs (customs) and non-tariff barriers, this cooperative organization is called AFTA (Asean Free Trade Area) where as the name of this AFTA was founded by member countries of ASEAN (Association of South East Asia), where this organization is a form of cooperative organization in the geo-political and economic realm, where all of its members consist of countries in the Southeast Asian region. The Association of South East Asia (ASEAN) was established in Bangkok, Thailand on August 8, 1967 by the founding countries, namely Indonesia, Malaysia, the Philippines, Singapore and Thailand through the Bangkok declaration. After that, it was followed by other Southeast Asian countries that joined together with ASEAN, namely the state of Brunei Darussalam which was officially on January 7, 1984, then followed by Vietnam which officially became part of ASEAN on July 28, 1995,

Tabel 1.

Data Ekspor ASEAN Periode 2017-2021

No.	Negara	Ekspor (US$)				
		2017	2018	2019	2020	2021

1.	Indonesia	168,882,513,335	168,882,513,335	168,882,513,335	168,882,513,335	168,882,513,335
2.	Thailand	186,586,103,000	186,586,103,000	186,586,103,000	186,586,103,000	186,586,103,000
3.	Malaysia	233,688,041,597	233,688,041,597	233,688,041,597	233,688,041,597	233,688,041,597
4.	Singapura	417,224,758,766	417,224,758,766	417,224,758,766	417,224,758,766	417,224,758,766
5.	Filipina	51,814,261,868	51,814,261,868	51,814,261,868	51,814,261,868	51,814,261,868
6.	Vietnam	215,119,000,000	215,119,000,000	215,119,000,000	215,119,000,000	215,119,000,000

Sumber :*World Bank*

Table 1.1 describes the development of export performance in ASEAN countries which is represented by the total value of goods exports (in units of %) with a total of 10 countries with accumulation from 2017-2021. Table 1.1 also shows that several countries in the ASEAN region experienced an increase and decrease in export volume in 2018, one of which was due to the trade war phenomenon between the United States and China, an increase in exports of goods during the trade war between the US and China. China is experienced by 3 countries, namely (Brunei Darussalam, Cambodia, and Myanmar) this increase can occur in these 3 countries due to the presence of the policy of increasing import tariffs by the US on raw goods such as aluminum and steel from China, and vice versa. So that the increase in import tariffs carried out by each country is used by the 3 ASEAN countries, namely (Brunei, Cambodia and Myanmar) to increase the level of exports by meeting the import needs of the destination countries, namely the US and China, especially supported by the ASEAN-China agreement. Free Trade Area (ACFTA) as a form of reducing international trade barriers between ASEAN and China (Directorate General of International Trade Negotiations, 2018). For the country of Brunei Darussalam itself, there has been an increase in exports of machinery and transportation equipment commodities from China (KBRI BSB, 2020). Some of the manufacturing industries that were previously exported from China were later taken over by Cambodia. Likewise, Myanmar uses this to replace raw goods from China to the US.

This is actually what makes the producing countries of electrical products such as Brunei, Cambodia and Myanmar actually take advantage of the trade war, so that the export volume from these countries has increased. Then, the decline in overall export activity in 2018-2019 may be due to a slowdown in the growth of trade in goods (export-import) (Ktut, 2020). Cambodia and Myanmar actually took advantage of the trade war, so that the volume of exports from these countries increased. Then, the decline in overall export activity in 2018-2019 may be due to a slowdown in the growth of trade in goods (export-import) (Ktut, 2020). Cambodia and Myanmar actually took advantage of the trade war, so that the volume of exports from these countries increased. Then, the decline in overall export activity in 2018-2019 may be due to a slowdown in the growth of trade in goods (export-import) (Ktut, 2020).

The Covid 19 pandemic in 2020 became a phenomenon that had the biggest impact on export activities in the ASEAN region. In table 1.1 it can be seen that before the pandemic, export activities in several countries in the ASEAN region were still relatively stable, although some countries had experienced a decline in goods export activities first, but the decline was still relatively safe, this decline was still related to the impact of the trade war. between the US and

China. In 2020, based on table 1.1, it can be seen that the majority of export activities began to decline, especially in the 1st and 2nd quarters of 2020 which occurred in January-June, as a result of the pandemic there were major changes in world trade patterns such as, This has an impact on the decline in production and export strength in each country in the ASEAN region.

Manufacturing products are considered as one of the variables that can affect the volume of exports in a country, the availability of manufactured products is one of the factors where this can measure the volume of goods to be exported. The manufacturing industry makes a major contribution to sustaining economic growth. The development of the manufacturing industry in each country has different technological specializations. Technology- based manufacturing industry management will produce output with a higher value, so that it can increase economic growth through exports (Vincentius, et al., 2019). The ASEAN region is the Asia Pacific region where the manufacturing sector has become one of the main drivers of economic growth in ASEAN-6 countries (Indonesia, Philippines, Malaysia, Singapore, Thailand, Vietnam). Manufacturing industry exports can increase through international trade organizations or organizations established by ASEAN member countries, namely the Asian Free Trade Area (AFTA) which aims to increase competitiveness in the global market, invest and increase trade among its members. The manufacturing industry supports the economic growth of ASEAN countries as reflected in the Manufacturing Value Added (MVA) (REES, 1968). Covid-19 is one of the world's phenomena that has an influence on the ASEAN economy, especially on the exchange rate.

The exchange rate is one of the tools used to conduct financial transactions between countries. If the exchange rate fluctuates, it will affect the economy of a country, especially in international trade. Factors that affect the exchange rate can be from an economic or non-economic perspective. From an economic point of view, the exchange rate is influenced by inflation, exports and imports, and others. While non-economic factors are seen from politics, pandemics, and others. The exchange rate is also considered as one of the variables that have an influence on export performance. The exchange rate or exchange rate is defined as the price of the domestic currency against the price of other countries' currencies (Salvatore, 1997). Changes in the value of exports are influenced by several factors, including the national income of the export destination country, and the exchange rate. Determination of foreign exchange rates is an important consideration for countries involved in international trade because foreign exchange rates have a large effect on the costs and benefits of international trade or exports and imports. The exchange rate can affect the price of domestic commodities in exporting abroad. For example, The exchange rate can affect the price of domestic commodities in exporting abroad. For example, The exchange rate can affect the price of domestic commodities in exporting abroad. For example, if the rupiah appreciates, then the domestic currency will strengthen and foreign currencies weaken, this will affect the reduced purchasing power of importing countries for domestic commodities as a result of rising domestic commodity selling prices, but the purchasing power of domestically imported commodities may increase. In terms of supply, if the domestic currency depreciates, the volume of exports will increase. So the foreign exchange rate has a direct relationship with the volume of exports. If the value of a country's exchange rate against the USD decreases, the volume of the exporting country will also increase (Sukirno,

2000). This also applies to currencies of other countries. Currency exchange rates (exchange rates) play a central role in international trade relations, because trade between two countries must use two different currencies. When a country's currency depreciates, exporting is considered more profitable.

Inflation is also assessed as one of the variables that have an influence on export performance. During the COVID-19 pandemic, most ASEAN countries experienced high inflation rates, inflation showed the ability of a country's government to balance the budget, and the ability of the central bank to carry out appropriate monetary policy, if the inflation rate is high then the government and central bank are considered to have failed to take action. and implement policies. Low inflation will be able to encourage economic growth, but high inflation will actually slow down the economy of a country which leads to the instability of the country's economy. Inflation is the process of increasing the general price of goods continuously over a certain period, so that the inflation rate can weaken the trade balance. This is because inflation will encourage a weakening of competitiveness and will eventually lead to a decline in exports (Fuad, 2017). According to Ball (2005), when the inflation rate is high, the prices of goods and services produced or offered by a country will increase so that the goods and services become less competitive. This indicates a negative relationship between inflation and exports.

In previous research conducted in several countries in ASEAN, it is known that export performance and the factors that affect the export performance of each country are not the same. Therefore, it is necessary to conduct an in-depth analysis of the influence of macroeconomic indicators (manufactured products, exchange rates, and inflation), especially in ASEAN countries.

THEORETICAL FRAMEWORK

Export

According to Perdana (2010), initially the commodities produced by producers were only offered within their country, but along with technological developments and the increasing needs of the world community so that the state could not meet the needs of its people and accompanied by the existence of countries with excess commodity producers, they would export by destination countries that require commodities desired by the country concerned. So it can be concluded that export is an effort made to sell commodities owned to other countries with reciprocity in the form of payments in foreign currency (Amir, 2003). There are factors that can affect exports, this can be seen from the perspective of demand and supply. From the demand side, exports are influenced by export prices, real exchange rates, income, and devaluation policies. Meanwhile, from the supply side, exports are influenced by export prices, domestic prices, real exchange rates, production capacity that can be produced through investment, imports of raw materials and deregulation policies (Husni, 2003).

Manufacturing Products

Manufacturing in economics is defined as an activity of transforming a raw material into a product that has a higher shape and selling value than before (Kalpakjian and Schmid, 2001).

In a more modern context, manufacturing activities to be converted into a product or finished goods must go through several processes, machines and operations, and follow a well-organized plan for each activity required. All products or finished goods that we encounter of course go through various processes called manufacturing (manufacturing). In addition to these ready-to-use products, manufacturing also involves activities where the products made are intended to make other products. The product in question is in the form of machines that are used to make various kinds of products. For example, press machines to make sheet plates into car bodies, machines to make components, or sewing machines to produce clothes (Supriyanto, 2013). Based on the understanding of manufacturing, it can be concluded that what is meant by manufactured products are products whose manufacture goes through various manufacturing processes. Various kinds such as food and beverage products, textiles or clothing, electronic products, handicraft products, pharmaceutical drugs, tobacco products, cement, transportation, automotive and agriculture (Kalpakjian and Schmid, 2001).

Exchange Rate

International trade involving several countries cannot be separated from the value specified exchange. According to Mankiw (2003) the exchange rate is the price that has been set in an international trade transaction. The exchange rate of a country's currency is divided into nominal exchange rates and real exchange rates. The nominal exchange rate is the relative price of the currencies of two countries while the real exchange rate is related to the relative prices of goods between the two countries. In his book, Mankiw (2003) explains the relationship between the exchange rate or the exchange rate with the volume of International Trade using the Mundell Fleming Model. This model assumes that the price level is fixed and shows the causes of short-run fluctuations in a small open economy with perfect capital mobility. The Mundell Fleming model shows that the depreciation or appreciation of the value of a currency will result in changes to both exports and imports.

Inflation

Inflation is a condition where there is an increase in the price of goods in general and continuously in a period. With the increase in the prices of goods and services, this will encourage people to carry out production activities so that the economy can be stimulated to increase national production activities. But keep in mind that inflation can reduce competitiveness and eventually lead to a decline in exports (Hielda, 2016).

Based on the theory and previous research, with the existence of several factors that affect export performance in ASEAN countries, the following hypotheses can be formulated:

1. Manufacturing products have a positive effect on export performance in ASEAN countries.
2. The exchange rate has a negative effect on export performance in ASEAN countries.
3. Inflation has a negative effect on export performance in ASEAN countries.

METHOD

To determine the effect of the variable manufacturing products, exchange rates, and inflation on export variables in ASEAN countries in 2017-2021, so in this study using multiple linear regression method with panel data model. Panel data regression is a regression that combines time series and cross section data. Panel Data Regression Model Estimation Method

In the analysis of the panel data model, there are three kinds of approaches consisting of a pooled least square (commont effect), a fixed approach (fixed effect), and a random effect approach (random effect). The three approaches can be explained as follows:

1. **Common Effect Model**

The Common Effects model combines cross section data with time series and uses the OLS method to estimate the panel data model. This model cannot distinguish the variance between cross-places and time points because it has a fixed intercept, and does not vary randomly.

2. **Fixed Effect Model**

The definition of a fixed effect model is a model with a different intercept for each subject (cross section), but the slope of each subject does not change over time. This model assumes that the intercept is different for each subject while the slope remains the same between subjects. In differentiating one subject from another, a dummy variable is used.

3. **Random Effect Model**

The random effect is caused by variations in the value and direction of the relationship between subjects, assumed to be random, which is specified in the form of residuals. This model estimates panel data in which residual variables are thought to have a relationship between time and between subjects. According to Widarjono (2009) the random effect model is used to overcome the weakness of the fixed effect model that uses dummy variables. Panel data analysis method with random model effect must meet the requirements, namely the number of cross sections must be greater than the number of research variables.

Model Determination Test

In panel data regression, there are three tests that can be used to determine the model best. The three tests are, Chow, Hausman test, and LM Effect test

a. Chow Test.

Chow test is a test to compare models common effectt with fixed effect (Widarjono, 2009). The hypothesis formed inchow testare as follows:

H_0: Modelcommon effect (probability value > 0.05)

H_1: Modelfixed effect (probability value < 0.05)

a. If the value of probability cross section F > 0.05 then H_1 rejected and H_0 accepted so that the correct model is the approximationcommon effect.
b. If the value of probability cross section F < 0.05 then H_0 rejected and H1accepted so that the correct model is the approximationfixed effect.

b. Hausman Test

This test compares the modelfixed effectwithrandom effectsin determining the best model to use in the panel data regression model.Hausman test carried out with the following hypothesis:
H0:Random Effect Model (probability value > 0.05)
H1:Fixed Effect Model (probability value < 0.05)

a. If the value ofprobability cross-section random<0.05, then H0rejected and H1accepted so that the appropriate model is a fixed effect approach (fixed effect).
b. If the value ofprobability cross-sectionrandom > 0.05, then H1rejected and H0accepted so that the appropriate model is a random effects approach (random effects).

c . Lagrange Multiplier Effect Test

This LM test is based on the Chi-Squares distribution with degrees of freedom (df) of number of independent variables. TestLagrange Multiplieraims to determine the best model among random effects approaches (random effects) and approachcommon effects. Hausman testcarried out with the following hypothesis:

H0:Common Effect Model (LM count <Chi-Squares)
H1:Random Effect Model(LM count >Chi-Squares)

If the calculated LM value > critical valueChi-Squares, then H0rejected and H1accepted, which means that the correct model for panel data regression is the modelRandom Effect.

a. If the calculated LM value < critical valueChi-Squaresthen H0accepted and H1rejected, which means that the correct model for panel data regression is the modelCommon Effect.

Classic assumption test

To produce a theoretically valid model, a process must meet several classical assumptions. This is necessary so that the results obtained can be consistent and theoretically efficient. There are four classical assumption tests performed on a regression model, namely

normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test, among others:

Multicollinearity Test

Multicollinearity test aims to test whether the regression model found a correlation between independent or independent variables. A good regression model should not have a correlation between the independent variables. Testing can be done by looking at the value of ToleranceandVariance Inflation Factor(VIF) in the regression model. The decision-making criteria related to the multicollinearity test are as follows (Ghozali, 2016):

1. If the value of VIF < 10 or the value ofTolerance>0.01, then it is stated that there is no multicollinearity.
2. If the VIF value > 10 or the value ofTolerance<0.01, then it is stated that there is multicollinearity.
3. If the correlation coefficient of each independent variable > 0.8 then multicollinearity occurs. But if the correlation coefficient of each independent variable < 0.8, then there is no multicollinearity.

Several alternative ways to overcome the problem of multicollinearity are as follows:

1. Replacing or removing variables that have a high correlation.
2. Increase the number of observations.
3. Transforming data into other forms, such as natural logarithm, square root or first difference delta.

Heteroscedasticity Test

For a good research model, there is no heteroscedasticity (Ghozali, 2016). The way to predict the presence or absence of heteroscedasticity in a model can be seen from the scatterplot image pattern of the model. The basis for decision making include:

a. If there is a certain pattern, such as the existing points forming a certain regular pattern (wavy, widening and then narrowing), then heteroscedasticity has occurred.
b. If there is no clear pattern and the points spread above and below the number 0 on the Y axis, then there is no heteroscedasticity.

Autocorrelation Test

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Autocorrelation test is an econometric tool used to test a model if the confounding error in a certain period is correlated with the confounding error in another period. A regression model can be said to be good when it is free from autocorrelation. To find out whether the regression model contains autocorrelation, the Durbin-Watson test is used.

Hypothesis formula:

Ho : P = 0, meaning that between the independent variables, namely manufacturing products, exchange rates and inflation, there is no autocorrelation between the dependent variable, namely export performance.

Ha : P 0, meaning that between the independent variables, namely foreign investment, inflation, GDP, and the exchange rate on the dependent variable, namely export performance, there is an autocorrelation.

Test criteria:

a. If dw, dL or dw > 4 – dL, then ho is rejected, meaning that there is a positive or negative autocorrelation
b. If du<dw< 4 – du, then ho is accepted, meaning that there is no autocorrelation.
c. If du < dw < du or 4 du < 4 – dL, then there is no conclusion.
d. du = Durbin Watson table at the lower limit dL = Durbin Watson table at the upper limit

Normality test

In Eviews softwarenormality of a data can be known by comparing the value ofJarque-Bera(JB) and valueChi Square table. TestJarque-Bera(JB) can be obtained from the normality histogram as below:

The hypotheses used are:

H0: data is normally distributed (JB count <Chi Square table)

H1: data is not normally distributed (JB count >Chi Square table) If the result of JB count >Chi Square table, then H0 rejected, If the result of JB count <Chi Square table, then H0 received

RESULT

Chow Test

The following are the results of the Chow Test:

Table 4.1 Chow Test

Redundant Fixed Effects Tests

Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	100.081156	(5,18)	0.0000
Cross-section Chi-square	90.730437	5	0.0000

Source: Processed Data Eviews 10, 2022

Output Interpretation:

The results of the Chow test show that the significance value of the F cross section is 0.0000, which means that the result of the probability is smaller than the value of , which is 0.05. Considering the conclusion from the Chow test, it shows that if the probability for Cross-Section F < 0.05 then H0rejected and H1accepted so that the correct model isFixed Effect Model (FEM).

Hausman test

The following are the results of Hausman:

Table 4. 2 Hausman test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.155886	3	0.3682

Source: Processed Data Eviews 10, 2022

Output Interpretation:

Based on the results of the Hausman test, it shows that the significance value is 0.3682, this indicates that the significance value is greater than the value, which is 0.05. Considering the conclusion from the Hausman test, it shows that if the significance value for Chi-Square > 0.05, then H0accepted and H1rejected, so the correct model used isRandom Effect Model (REM).

By looking at the results of the Chow Test, namely:Fixed Effect Model (FEM) and the results of the Hausman Test areRandom Effect Model (REM), it cannot be concluded which model is the best for regression testing because the results of the two tests are different. To determine which model is the best for regression testing, it is necessary to have a final test, namelyLagrange Multiplier (LM) test.

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Lagrange Multiplier Effect Test

The following are the results of the Lagrange Multiplier Test:

Table 4. 3 Lagrange Multiplier Effect Test

Lagrange multiplier (LM) test for panel data
Date: 08/04/22 Time: 22:08
Sample: 2017 2021
Total panel observations: 27
Probability in ()

Null (no rand. effect) Alternative	Cross-section One-sided	Period One-sided	Both
Breusch-Pagan	22.83968 (0.0000)	0.286116 (0.5927)	23.12579 (0.0000)

Source: Processed Data Eviews 10, 2022

Output Interpretation:

Based on the results of the Lagrange multiplier test, it shows that the Breusch- Pagan significance value is 0.0000, this indicates that the significance value is smaller than the value, which is 0.05. Considering the conclusion from the Lagrange multiplier (LM) test that if the probability for Breusch-Pagan (BP) < 0.05 then H0 rejected and H1accepted so that the correct model isRandom Effect Model (REM).

Regression Model Estimation

The following are the results of the regression model estimation, namelyRandom Effect Model (REM):

Table 4. 4 Random Effect Model

Dependent Variable: Y
Method: Panel EGLS (Cross-section random effects)
Date: 08/04/22 Time: 21:39
Sample: 2017 2021
Periods included: 5
Cross-sections included: 6
Total panel (unbalanced) observations: 27
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.17819	1.918628	6.347344	0.0000
X1	0.485386	1.119341	0.433636	0.0486
X2	-0.023854	0.075257	-0.316961	0.0141
X3	-0.027355	0.055062	-0.496798	0.6240

Effects Specification	S.D.	Rho

Cross-section random		0.299346	0.9699
Idiosyncratic random		0.052698	0.0301
	Weighted Statistics		
R-squared	0.019326	Mean dependent var	0.931862
Adjusted R-squared	-0.108588	S.D. dependent var	0.082013
S.E. of regression	0.052962	Sum squared resid	0.064515
F-statistic	0.151088	Durbin-Watson stat	1.203819
Prob(F-statistic)	0.027926		
	Unweighted Statistics		
R-squared	0.043330	Mean dependent var	11.27630
Sum squared resid	2.283599	Durbin-Watson stat	0.034009

Source: Processed Data Eviews 10, 2022

The results of the above analysis were carried out using the Eviews 10 program by generating an estimation model. Seen from the results of the analysis, there are several things from the results of the analysis which I detail as follows:

Individual Regression Coefficient Test (t Test)

This analysis is used to measure the strength of two or more variables and also shows the direction of the relationship between the dependent variable and the independent variable.

The formula for multiple linear regression(multiple linear regression)in general are:

$$\mathbf{Y= \alpha+ \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e}$$

Linear regression analysis was used in this study with the aim of knowing whether there was an influence of the independent variables. The t-statistical test shows how far one independent variable individually explains the variation of the dependent variable.

There are two ways to look at this:

- If Prob. > (5%), then H0 received; On the other
- hand, if Prob < 0.05 then H0 rejected

Notes:

H0= independent variable does not affect the dependent variable.

H1= independent variable affects the dependent variable.

Based on the results of the t test, the decision making is as follows:

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Testing on the variable X1

Based on the results 1 calculation data with use program Eview 10. The results obtained that the significance value of 0.0486. This means that the decision H0rejected and H1accepted, it means X1significant effect on Y because the significance value is less than 0.05 with a positive relationship direction.

Testing on the X2

Based on the results of data calculations using the Eviews 10 program. The results obtained that the significance value is0.0141. This means that H0rejected and H1 accepted, meaning X2 significant effect on Y because the significance value is less than 0.05 with a negative relationship direction. Testing on the X3 Based on the results of data calculations using the Eviews 10 program. The results obtained that the significance value is 0.6240. This means that H1rejected and H0 accepted, it means X 3no significant effect on Y because the significance value greater than 0.05 with a negative relationship direction.

Based on the test results with multiple linear regression method to test the effect of the independent variables (X1,X2,and X3) to the dependent variable (Y) then an equation can be arranged as follows:

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e}$$

$$\mathbf{Y} = 12.17819 + 0.485386\mathbf{*X_1} - 0.023854\mathbf{*X_2} - 0.027355\mathbf{*X_3}$$

These results can be explained as follows:

a. Regression coefficient X1is 0.48 which means that every increase in X1by 1% it will increase Y by 0.48% assuming other variables are constant, and vice versa.
b. Regression coefficient X2is -0.02 which means that every increase in X2by 1% will reduce Y by 0.02% assuming other variables are constant, and vice versa.
c. Regression coefficient X3is -0.02 which means that every increase in X2by 1% will reduce Y by 0.02% assuming other variables are constant, and vice versa.

Simultaneous Regression Coefficient Test (F Test)

Testing the F test hypothesis is used to see whether the independent variables have a significant effect on the dependent variable overall.

The results of data processing show that the independent variables (X1, X2 and X3) the significance of F count is0.151088with a lower level of significance (0.027926) of 0.05. Thus the results of the analysis in this study indicate that together the independent variables (X1, X2 and X3) have an effect on Y. Thus the first hypothesis (H1) in this study is acceptable.

Coefficient of Determination (R2)

The coefficient of determination (R2) is used to measure how far the model's ability to explain the variation of the dependent variable. The value of the coefficient of determination is zero to one. Value (R2) which is small means the ability of the independent variables in explaining the variation of the dependent variable is very limited. Meanwhile, the value (R2) which is close to one means that the independent variables provide almost all the information needed to predict the variation of the dependent variable or in other words the independent variables in the model are able to explain the variation of the dependent variable very well. The coefficient of multiple determination in eviews 10 is the same as in other applications, which is labeled R-Square. In the table above, it can be seen that the R- Square is 0.019326, which means that a set of dependent variables in the model can explain the independent variables of 93.26%. While the rest is explained by other variables outside the model that are not studied.

Classic assumption test

Multicollinearity Test

The following are the results of the Multicollinearity Test:

Table 4. 5 Multicollinearity Test

	X1	X2	X3
X1	1.000000	0.302976	0.194184
X2	0.302976	1.000000	0.542774
X3	0.194184	0.542774	1.000000

Source: Processed Data Eviews 10, 2022

Output Interpretation:

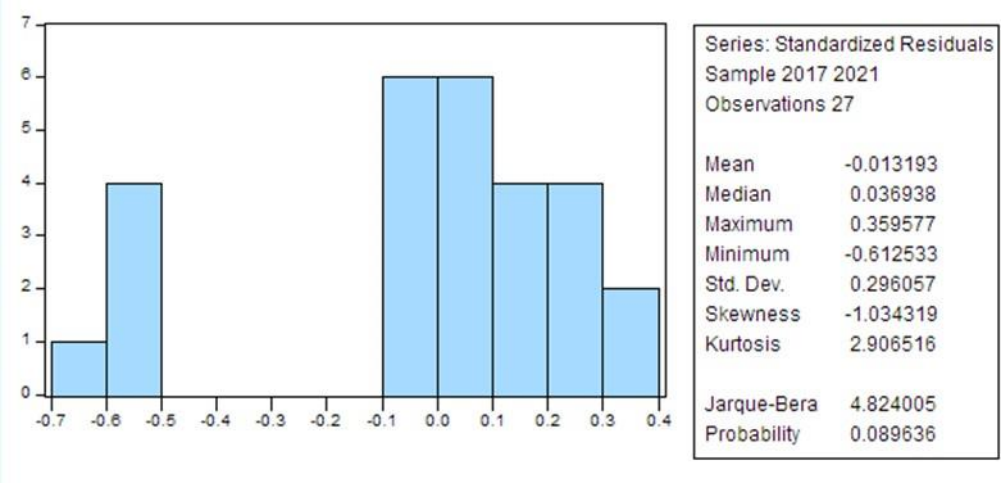
A regression model that is classified as good is that there is no strong correlation between the independent variables in the model. Regression models experience multicollinearity when two or more independent variables in the model have a strong correlation. One way to detect multicollinearity is to use correlation matrices, where if the correlation matrix is greater than 0.8,

it means that there are symptoms of multicollinearity. Based on the results of the Correlation Matrics, the magnitude of the correlation coefficient between independent variables in the regression model is less than 0.8. In other words, the regression model in this study does not experience multicollinearity.

Normality test

The following are the results of the Normality Test:

Table 4. 6 Normality Test



Source: Processed Data Eviews 10, 2022

Output Interpretation:

The normality test is carried out with the aim of seeing whether the error term is normally distributed or not. Normality test is done by looking at the probability of Jarque-Bera. If the Jarque-Bera probability is greater than = 5%, it can be said that the error term is normally distributed. Based on the results of the normality test, by looking at the JarqueBera probability value of 0.089636 at = 5%, it can be said that the error term is normally distributed because the JarqueBera probability is greater than = 5%

Heteroscedasticity Test

The following are the results of the Heteroscedasticity Test:

Table 4. 6 Heteroscedasticity Test

Dependent Variable: RESABS
Method: Panel Least Squares
Date: 08/04/22 Time: 23:17
Sample: 2017 2021
Periods included: 5

Cross-sections included: 6
Total panel (unbalanced) observations: 27

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-15.07038	2.882994	-5.227337	0.0000
X1	9.015270	1.695034	5.318636	0.0782
X2	-0.085639	0.018530	-4.621564	0.1511
X3	0.311405	0.094733	3.287189	0.0632

Source: Processed Data Eviews 10, 2022

Output Interpretation:

Heteroscedasticity testing aims to test whether the model regression occurs the variance inequality from the residual of one observation to another observation. If the residual variance from one observation to another observation remains, it is called homoscedasticity and if it is different it is called heteroscedasticity. A good regression model is one with homoscedasticity or no heteroscedasticity (Ghozali, 2016). Based on the results of the heteroscedasticity test, it shows that the value ofvariable pvalueX1 0.0782 and X2 0.1511 and X3 0.0632 show values that are greater than the levelalpha0.05, it can be concluded that this data has no problemsheteroscedasticity.

Autocorrelation Test

The following are the results of the Autocorrelation Test as seen from the results:Random Effect Models:

Table 4. 7 Autocorrelation Test

R-squared	0.019326	Mean dependent var	0.931862
Adjusted R-squared	-0.108588	S.D. dependent var	0.082013
S.E. of regression	0.052962	Sum squared resid	0.064515
F-statistic	0.151088	Durbin-Watson stat	1.203819
Prob(F-statistic)	0.927926		

Source: Processed Data Eviews 10, 2022

Result of output interpretation:

Through the Durbin Watson table, it can be seen:

dL = 1.2138

dU = 1.6498

4-dL = 2.7862

4-dU = 2.3502

durbin watson = 1.203819

In accordance with the basis of decision making if the analysis shows that Durbin Watson is located at 0 < d < dL, so it can be concluded that there is no positive autocorrelation at that location.

DISCUSSION

Effect of Manufacturing Products on Exports

This research is supported by the theory presented by Kaldor (1967) which in his statement reveals that the manufacturing industry sector is an engine of growth for a region in increasing the growth of other sectors and also increasing economic growth. Kaldor also introduced the concept of dynamic economies of scale which states that the higher the output growth of the manufacturing sector, the higher the productivity of this sector will also be, including international trade activities in the form of export activities which are strongly supported by the role and existence of the availability of manufactured products and the productivity of workers. The first hypothesis proposed in this study is to examine how the effect of Manufacturing Products (X1) to Export (Y). Table 4.8 shows that the significance value is 0.0486. This means that H0 rejected and H1accepted, it means X2significant effect on Y because the significance value is less than 0.05 with a positive relationship direction. In this case, it can be interpreted that the Manufactured Product (X2) has a significant effect on exports (Y), it can be concluded that the results of the first hypothesis (H1) which states that manufactured products have an effect on exports received. The results of multiple linear regression analysis that have been carried out using Eviews 10 can be stated that manufactured products have a positive and significant effect on export performance in Singapore, Malaysia, Thailand, Indonesia, Vietnam and the Philippines. Based on the estimation results that have been obtained, it is explained that an increase in the value of manufactured products against the dollar by 1% will increase the export value by 0.48% assuming other variables are constant, and vice versa.This is due to because manufactured products in several ASEAN countries, especially Indonesia, Vietnam, Singapore, Thailand, Malaysia, and the Philippines are assumed to be one of the factors driving the economic growth of ASEAN countries, especially in the field of exports (international trade) with the increasing number of manufacturing production, this has a significant impact. large enough to increase exports in the country.

The Effect of Exchange Rates on Exports

This research is supported by the theory which states that an increase in the value of the local currency against the dollar will increase the income derived from exports so that the value of these exports will increase. This research is also supported by previous research, namely research conducted by Ophelia (2019) where this exchange rate has a negative and significant influence on exports in ASEAN countries (Indonesia, Thailand, Philippines, Malaysia, and Vietnam). The second hypothesis proposed in this study is to test how the influence of the Exchange Rate (X2) to Export (Y). Table 4.8 shows that the significance value is 0.0141. This means that H0rejected and H1accepted, it means X2significant effect on Y because the significance value is less than 0.05 with a negative relationship direction. It means Exchange Rate (X2) has a significant effect on exports (Y), it can be concluded that the results of the third hypothesis (H3) which states that the Exchange Rate has an effect on the accepted export. The results of multiple linear regression analysis that have been carried out using Eviews 10 can be stated that the exchange rate has a negative and significant effect on export performance in Singapore, Malaysia, Thailand, Indonesia, Vietnam and the Philippines. Based on the estimation results that have been obtained, it is explained that an increase in the rupiah exchange rate against the dollar by 1% will reduce the export value by 0.02% assuming other variables are constant, and vice versa. When the exchange rate of the domestic currency depreciates against foreign currencies, domestic goods will be relatively cheaper than foreign goods. Consumers at home and abroad will be more interested in relatively cheaper domestic goods so that it will improve the export performance of the country concerned.

The Effect of Inflation on Exports

In general, if inflation increases, the price of goods in the country will increase, an increase in the price of goods is the same as a decrease in the value of the currency. If inflation increases it will result in an increase in prices which will be accompanied by a decrease in production costs caused by rising production costs so that in this case it will reduce the number of exports. Costs that continue to rise will cause productive activities to be very unprofitable, productive investment will decrease and the level of economic activity will decline. The increase in prices causes the country's goods to be unable to compete in the international market so that exports will decline. This is in line with the research conducted by Annisa (2019) where the study showed that the inflation rate had a negative effect on exports in ASEAN 5 countries (Thailand, Indonesia, Vietnam, Malaysia, and the Philippines) in 2010-2019. The results of the

current research are also supported by the theory used in the study which stated that a low percentage of inflation is expected to increase the export value of a country. This low inflation rate is expected to help domestic products compete with foreign products. Based on the estimation results that have been obtained, it is explained that an increase in the percentage of inflation by 1% will reduce the value of exports by 0.02% with the assumption that other variables are held constant, and vice versa.

The third hypothesis proposed in this study is to test how the effect of inflation (X3) to Export (Y). Table 4.8 shows that the significance value is 0.6240. This means that H1rejected and H0accepted, it means X3no significant effect on Y because the significance value is greater than 0.05 with a negative relationship direction. It means Inflation (X3) has no significant effect on exports (Y), so it can be concluded that the results of the third hypothesis (H3) which states that Inflation affects exports is accepted. Based on the estimation results that have been obtained, it is explained that an increase in the percentage of inflation by 1% will reduce the export value by 0.014191 with other variables considered constant. This is due to the inflation rate in Singapore, Malaysia, Thailand, Indonesia, Vietnam and the Philippines (6 ASEAN countries). Although some countries had experienced high inflation fluctuations with inflation rates above 10% such as Indonesia and Vietnam, but the inflation rate of ASEAN countries was relatively below the average inflation rate of ASEAN and continued to improve after the COVID-19 pandemic.

CONCLUSION

This study aims to empirically examine the effect of manufactured products, exchange rates, and inflation rates on exports in the ASEAN Region for the 2017-2021 period. Based on the results of the analysis tests that have been carried out previously, this study produces several conclusions, namely:

1. Manufacturing Products have a positive and significant impact on exports in the ASEAN Region. This explains that every increase experienced by manufactured products by one percent will increase exports in the ASEAN Region with the assumption that other variables are held constant.
2. The exchange rate has a positive and significant influence on exports in the ASEAN Region. This explains that every increase experienced by the exchange rate by one percent

will increase exports in the ASEAN Region with the assumption that other variables are held constant.

3. Inflation has a negative and insignificant effect on exports in the ASEAN Region. This explains that any increase experienced by inflation by one percent will reduce exports in the ASEAN Region with the assumption that other variables are held constant

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