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DETERMINATION OF AGRICULTURAL EXPORTS IN NORTH SUMATRA

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Abstract

Export is the process of transporting goods from one country to another legally and export is very important in forming a country's balance of payments. The purpose of this study was to determine whether gross domestic product, exchange rate, and inflation affect agricultural exports in North Sumatra. This study uses a quantitative approach. Quantitative research is research that emphasizes the analysis of numerical data (numbers) that are processed using statistical methods. The method used in this research is descriptive and verification method. From the research results it is known that the probability of the firm value variable is 0.002816 <0.05, and the F-Statistics value is 6.800019 > 2.64. Based on the results of the simultaneous test it can be seen that the Regional Gross Domestic Product (X1), Exchange Rate (X2), and Inflation (X3) have a positive and significant effect on Regional Exports of North Sumatra together. The R2 value is 0.2619 or 26.19%. This shows that the variables of Regional Gross Domestic Product, Exchange Rate and Inflation can only explain the regional export variable of only 24.90%. While the remaining 75.10% is explained by other variables outside the regression model in this study.

Keywords: Agricultural exports, Gross Domestic Product, Exchange Rates, Inflation

INTRODUCTION

Export activity is a trading system in removing goods from within the country to abroad by fulfilling the applicable provisions. Exports are the total goods and services sold by a country to other countries, including goods, insurance, and services in a given year (Sutedi, 2014). Export is the process of transporting goods from one country to another legally and export is very important in forming a country's balance of payments (Apridar, 2012). Indonesia has exported quality to various countries in Asia in the agricultural sector (Country, 2021).

The Ministry of Trade (Kemendag) shows value export non-oil and gas agricultural sector in_Indonesia reached US$ 3.83 billion for the January-November 2021 period. This value increased 4.1% compared to the same period the previous year which was recorded at US$ 3.68 billion. The export value of the agricultural sector from January to November 2021 accounts for 1.97% of Indonesia's total non-oil and gas exports. Some of Indonesia's export commodities come from the agricultural sector, including coffee, tea, and spices. This commodity contributed the highest export value during January-November 2021, reaching US$ 1.33 billion or 0.7% of total non-oil and gas exports (Dhinni, 2021).

With the increase in the export value, will it have a direct impact on the income of a region or country. This is the hope for each region to increase regional income in order to increase regional productivity and increase economic growth. These efforts are made for regional prosperity and reduce the amount of poverty in a region or country. To find out more about the value of agricultural exports in Indonesia, you can see data from the Ministry of Trade for the 2016-2021 period as follows:

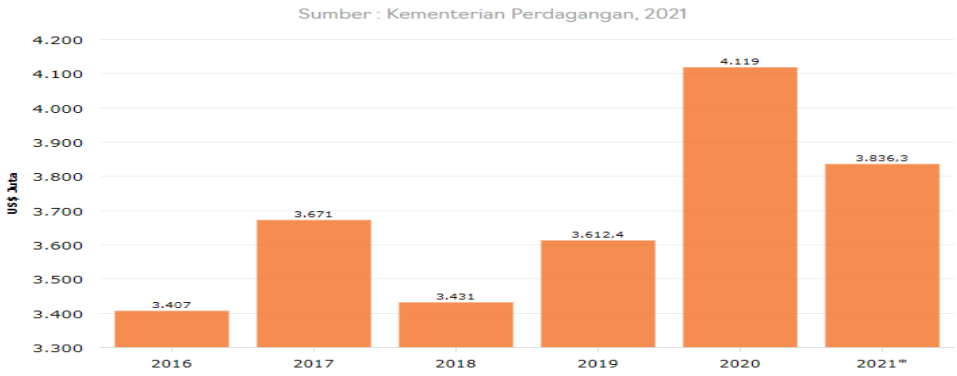

Figure 1
Agricultural Exports in 2016-2021

Broadly speaking, economic activities can be grouped into activities of producing and consuming goods and services. Units of economic activity produce goods and services, where the results of these production activities are income received by the factors of production that are owned by various groups in society. Another important thing is the factors of investment, exports and government spending which can affect employment.

Indonesia's export value has accelerated positively. In the August 2021 period, the export value reached US$21.42 billion, up 20.95% compared to exports in July 2021 and up 64.10% compared to August 2020. This export value was also recorded as a new highest record for Indonesian exports after previously occurring in August 2011 amounted to US$ 18.60 billion (Ministry of Finance, 2022). Based on the release of the Central Bureau of Statistics, the increase in exports in August was due to an increase in non-oil and gas exports by 21.75% from US$16,720.6 million to US$20,356.7 million. Non-oil exports play a role of 94.45% of total exports from January to August 2021.

Table 1
Exports of Agricultural Products 2013-2020

Tahun	Berat Bersih (ribu ton)	Nilai (juta US$)	% Perubahan Nilai
(1)	(2)	(3)	(4)
2013	2 462,2	3 598,5	0,02
2014	2 777,3	3 373,3	-6,26
2015	3 621,5	3 726,5	10,47
2016	3 453,0	3 354,8	-9,98
2017	4 177,6	3 671,0	9,43
2018	4 345,4	3 431,0	-6,54
2019	4 981,7	3 612,4	5,29
2020	5 677,9	4 119,0	14,02

Source: Central Statistics Agency Catalog

The total agricultural products exported in 2020 are 50 groups of goods. The commodity group that has the largest contribution to exports of agricultural products in 2020 comes from annual crop agricultural commodities, namely 55.65 percent. The development of exports of agricultural products from time to time shows fluctuating trends both in terms of weight and value.

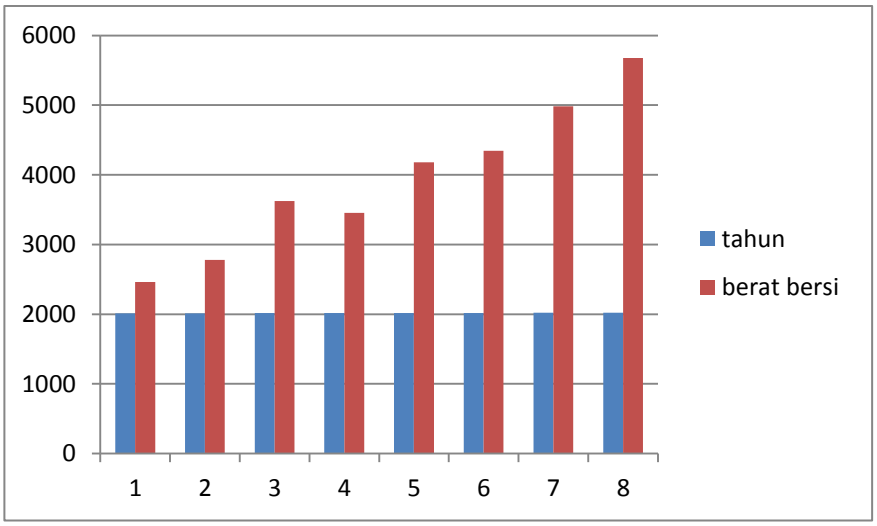

Figure 2.
Exports of Agricultural Products 2013-2020

The growth in the export value of agricultural products in 2014 and 2016 decreased by 6.26 percent and 9.98 percent, respectively. Meanwhile, the growth in the export value of agricultural products in 2015 and 2017 showed a positive performance, which increased by 10.47 percent and 9.43 percent respectively. Nonetheless, the export value of agricultural products again decreased by 6.54 percent in 2018, and finally increased again in 2019 by 5.29 percent. Interestingly, during the COVID-19 pandemic, exports of agricultural products managed to increase by 14.02 percent in 2020. In fact, this figure was recorded as the biggest increase in the last eight years (BPSRI, 2021).

International trade is not only carried out by developed countries, but also by developing countries. With the existence of international trade, a person can go to another country to bring in certain commodities, then carry out commodity purchase transactions for him to transfer to his country. He can also take commodities to be sold in other countries so that he will provide the price of these commodities for his country (Nabhani, 2009).

In general, the economies of developing countries are oriented more towards the production of primary goods (agricultural products, fuel, forest products and raw materials) than towards secondary goods (manufacturing) and tertiary goods (services). These primary commodities are the mainstay of exports to other countries, but export growth has not been able to keep pace with exports of developed countries (Todaro, 1998). A more important factor in determining exports is the ability of a country to produce goods that can compete in foreign markets. The taste of people abroad for goods that can be exported from a country plays a very important role in determining the country's exports.

On the other hand, North Sumatra is one of the provinces that has people with income from farming products. The people of North Sumatra, in fulfilling their lives, carry out agricultural activities. If the farming community in North Sumatra is able to increase productivity for export, then North Sumatra's gross domestic product income will increase. This will improve the regional economy and the economic goals of a region will be achieved, thereby reducing the level of poverty in an area. Furthermore, agricultural exports in North Sumatra will have a direct impact on regional income and gross domestic product. These efforts are made to improve the quality of life in an area and create jobs for the community.

The Development of Foreign Trade of North Sumatra During 2010 North Sumatra’s exports experienced an increase of 41.60 percent. North Sumatra's exports reached their highest value in 2011 which reached US$11.88 billion, an increase of 29.90 percent compared to 2010. Since 2012, North Sumatra’s exports have again experienced a decline, namely in 2012 it fell 12.53 percent, in 2013 it fell 7 .66 percent, in 2014 it fell 2.47 percent, in 2015 it fell 17.18 percent. In 2017 there was an increase of 18.72 percent and in 2020 it again rose 5.50 percent.

Table 2
Development of Foreign Trade of North Sumatra 2000-2020

Tahun/ Year	Ekspor/Export		Impor/Import		Neraca/ Balance (000 US$)	Perubahan/Changes (%)		
	Berat Bersih/ Netto (Ton)	Nilai FOB/ FOB Value (000 US$)	Berat Bersih/ Netto (Ton)	Nilai CIF/ CIF Value (000 US$)		Nilai Ekspor/ Export Value	Nilai Impor/ Import Value	Neraca/ Balance
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2000	5 166 654	2 437 764	2 620 166	775 287	1 662 477	-6,46	10,82	-12,81
2001	5 492 340	2 294 796	2 830 243	860 758	1 434 038	-5,86	11,02	-13,74
2002	6 622 573	2 891 996	2 684 055	819 298	2 072 698	26,02	-4,82	44,54
2003	5 490 113	2 687 877	2 343 112	679 810	2 008 067	-7,06	-17,03	-3,12
2004	7 512 890	4 239 409	3 221 858	953 359	3 286 050	57,72	40,24	63,64
2005	8 174 804	4 563 075	3 717 119	1 178 006	3 385 069	7,63	23,56	3,01
2006	8 704 825	5 523 900	4 404 172	1 456 987	4 066 913	21,06	23,68	20,14
2007	7 841 873	7 082 899	4 745 767	2 109 879	4 973 020	28,22	44,81	22,28
2008	8 520 892	9 261 977	5 880 789	3 696 065	5 565 912	30,77	75,18	11,92
2009	8 058 927	6 460 117	5 236 553	2 724 236	3 735 881	-30,25	-26,29	-32,88
2010	7 992 103	9 147 778	6 171 735	3 576 248	5 571 530	41,60	31,28	49,14
2011	8 161 004	11 883 269	6 718 062	4 953 462	6 929 807	29,90	38,51	24,38
2012	8 695 941	10 393 936	6 813 899	5 164 750	5 229 186	-12,53	4,27	-24,54
2013	9 275 891	9 598 008	6 949 116	5 108 512	4 489 496	-7,66	-1,09	-14,15
2014	9 087 527	9 361 110	7 391 306	5 046 512	4 314 598	-2,47	-1,21	-3,90
2015	9 008 520	7 752 786	6 853 734	3 988 440	3 764 346	-17,18	-20,97	-12,75
2016	8 387 357	7 770 742	6 819 193	3 914 490	3 856 250	0,23	-1,85	2,44
2017	8 981 772	9 225 286	7 038 772	4 635 808	4 589 478	18,72	18,43	19,01
2018	9 645 621	8 787 224	7 215 593	5 652 347	3 134 878	-4,75	21,93	-31,69
2019	9 529 180	7 663 174	6 301 659	4 530 324	3 152 653	-12,79	-19,85	0,06
2020	8 831 142	8 084 391	5 795 198	3 979 889	4 104 502	5,50	-12,15	30,19

Source: Central Bureau of Statistics

Table 2 above shows that the value of exports in 2020 through North Sumatra reached US$8.08 billion, an increase of 5.50 percent compared to the previous year which reached US$7.66 billion. The increase in North Sumatra's export performance is not like what has happened in several other Asian countries, which are showing a slowdown due to the COVID-19 outbreak. The high export performance in 2020 was caused by rising prices for palm oil (CPO) due to increased demand from China and India. This is good news for the economy of North Sumatra, especially in the midst of the Covid-19 pandemic that has hit the world (BPSSUMUT, n.d.).

Table 3
Export of North Sumatra Agriculture Sector

No.	Year	FOB Value (Million US$)	Net Weight (Thousand Tons)
1.	2018	702.88	307,80
2.	2019	697,74	310.68
3.	2020	307,80	303.66

Source: processed from the Central Statistics Agency

From the description of Table 3 above, it can be seen that North Sumatra's exports have decreased from 2018 to 2020. It can be seen that exports in 2018 amounted to 702.88 while in 2020 it was 307.80, this was a very significant decrease during the 2-year term. However, according to Margo Yuwono, in an official statement held virtually, the Central Statistics Agency (BPS) noted that the export value of the agricultural sector in June 2021 had increased, namely by 33.04 percent (M-to-M) or by 15.19 percent on a (Y-on-Y) basis.

The increase occurred after the commodities of medicinal plants, aromatics, spices, coffee and swallow's nest contributed a large share in exports during June 2021(Indonesia, 2022). The increase in the value of agricultural exports is directly proportional to the development of farm labor wages in February 2022 of IDR 57,771 or an increase of 0.31% (MtoM). Meanwhile, farm labor wages in real terms increased by 0.31%(Indonesian media, 2022).

Based on Bloomberg data, the Composite Stock Price Index (IHSG) dated June 24th 2019, the agricultural sector also strengthened 1.95 percent. Even though the JCI generally moved into the red zone or weakened 0.25 percent or 15.92 points to a level of 6,299.51. Chairman of Committee II DPD RI M Aji Mirza Wardana assessed that the increase in the value of agricultural exports and positive performance in May 2019 and this year proved that the Ministry of Agriculture's policies and programs succeeded in increasing production and also significantly increased export values.

Thus, the Minister of Agriculture Andi Amran Sulaiman succeeded in making many proud changes. The Head of the Ministry of Agriculture's Public Relations and Public Information Bureau Kuntoro Boga Andri explained that the sharp increase in export value in May 2019 and the first half of this year was the result of the Ministry of Agriculture's focus program on increasing economic growth through exports and investment. To encourage exports, one of them is the Ministry of Agriculture issued a policy to facilitate export licensing with a short processing time, which is around 3 hours. Agricultural economic growth recently reached 3.7%. This figure exceeds the target set by the government of 3.5%. In terms of food inflation for the 2014-2017 period, food inflation fell significantly by 88.1%, from 10.57% to 1.26% (Indonesia, 2022).

Just like in research by Anis Suprapti with the title Analysis of Agricultural Food Commodity Exports in East Java, which states that the food agriculture sector (X1), the

rupiah exchange rate against the dollar (X2), the inflation rate (X3) has an effect on the value of agricultural food exports (Y) has its own influence - alone to the value of agricultural food exports in East Java (Suprapti, 2014).

Research was also conducted by Alvis Rozani and Nurul Huda (2022) with the title Excellence in exports between countries and the competitiveness of Indonesian MSME products using the Gravity Model Approach. The results of this study say that in general export destinations in these countries are dominated by plantation products and textile products. Thus it can be concluded that Indonesian MSME export products have competitiveness in 12 export destination countries (Rozani & Huda, 2022).

REVIEW OF LITERATURE

Export

Export activity is a trading system by removing goods from within the country to abroad by fulfilling the applicable provisions. Exports are the total goods and services sold by a country to other countries, including goods, insurance and services in a given year (Sutedi, 2014). Export is the process of transporting goods from one country to another legally and export is very important in forming a country's balance of payments (Apridar, 2012).

Physically, exports are defined as shipments and sales of domestically made goods to other countries. This shipment will generate a flow of expenditure into the corporate sector. Thus, aggregate spending will increase as a result of exporting goods and services, in the end this situation will lead to an increase in national income (Sukirno, 2013). Export activity is a trading system by removing goods from within the country to abroad by fulfilling the applicable regulations. Exports are the total goods and services sold by a country to other countries, including goods, insurance and services in a given year. Export is one of the economic sectors that plays an important role through market expansion between several countries, where it can expand in one industry, thereby encouraging other industries, then pushing other sectors of the economy.

International trade is defined as trade carried out by a country with other countries on the basis of mutual trust and mutual benefit. International trade is not only carried out by developed countries, but also by developing countries. With the existence of international

trade, a person can go to another country to bring in certain commodities, then carry out commodity purchase transactions for him to transfer to his country. He can also take commodities to be sold in other countries so that he will provide the price of these commodities for his country (Nabhani, 2009).

A more important factor in determining exports is the ability of a country to produce goods that can compete in foreign markets. That is, the quality and price of goods exported must at least be as good as those traded in foreign markets. The taste of people abroad for goods that can be exported from a country is very important in determining the country's exports (Sukurono, 2006).

Exchange Rate

According to Krugman and Obstfeld the exchange rate is the price of a currency against other currencies. Then in their book according to Lindert and Kindlberger the exchange rate is a type of price or the value of a country's money as measured by the money of other countries. Meanwhile, according to Ekananda, the exchange rate is a relative comparison of the price of a currency against other foreign currencies (Ekananda, 2014).

The exchange rate becomes very important, if a country has to carry out economic transactions with other countries. This is because in this process different currencies are used, for example, between Indonesia and the United States. America must buy rupiah to buy goods or carry out economic activities in Indonesia, and vice versa. In simple terms, the exchange rate can be interpreted as the price of a domestic currency against another country's currency. The price of a currency against another currency is called the exchange rate or exchange rate.

The exchange rate is one of the most important things in an open economy, because it has a very large influence on the current account balance and other macroeconomic variables. The exchange rate describes the price of a currency against another country's currency, it is also the price of an asset or price (Krugman, 2005). In economics, the exchange rate of a country's currency can be divided into two, namely the real exchange rate and the nominal exchange rate (Mankiw, 2007).

Nominal exchange rates are the rates a person uses when exchanging one country's currency for another country's currency. So, the rupiah exchange rate is the value of one

rupiah currency that is exchanged into another country's currency. For example, the rupiah exchange rate against the US dollar, the rupiah exchange rate against the Yen, the rupiah exchange rate against the Euro and others. Meanwhile, the real exchange rate is the value that a person uses when exchanging goods and services of one country for goods and services of another country. The real exchange rate states the rate at which economic actors can trade goods from one country for goods from other countries.

Inflation

Inflation is an economic event that often occurs even though we never want it to. Milton Friendman said inflation can happen anywhere and is always a monetary phenomenon (Bishop, 2010). It is considered a monetary phenomenon due to a decrease in the value of a monetary unit for a commodity. Keynesian economists believe that inflation can occur independently of monetary conditions. If defined, inflation is an increase in the price of goods and services in general and continuously (Ibrahim, 2013).

Inflation occurs when there is an increase in prices, is general in nature, takes place continuously and occurs simultaneously (Rahardja & Manarung, 2008). The price increase is not intended to occur momentarily. Price increases under certain conditions are not a problem because prices will return to normal, so if there is a price increase that is only temporary, it cannot be said to be inflation. Inflation is also related to price increases in general, meaning that price increases do not only occur for one particular type of good or service, but that price increase includes a group of goods consumed by the public, moreover, this increase will affect the prices of other goods on the market, while continuing means that the price increase lasts only for a moment, once, twice, then subsides again, so it is not called inflation.

Continuous price increases will result in the supply of goods and services experiencing scarcity, while consumers have to spend more money for the same amount of goods and services which results in a decrease in the value of money thereby eroding the purchasing power of a unit of currency (Rozalinda, 2014). This condition resulted in worsening economic conditions as a whole and was able to shake the political order of a country (Fahmi, 2010).

According to Ebert and Griffin, inflation is a condition where the number of goods in circulation is less than the number of requests so that it will result in widespread price

increases in the economic system as a whole (Hilwatunnadriyah, 2016). Meanwhile, according to Sadono Sukirno, inflation is an increase in the price of goods and services, which occurs because demand increases more than the supply of goods on the market. Types of goods classified for inflation calculations include the price of goods in the food group, housing group, and clothing group (Hasyim, 2016).

RESEARCH METHOD

This study uses a quantitative approach. Quantitative research is. The method used in this research is descriptive and verification method. This type of research is causal associative research. The research data is panel data which is a combination of time series data and also cross-sectional data. The amount of data used in this study is sampling data from 33 regencies/cities in North Sumatra Province, with a period of 5 years from 2017 to 2021. The samples were obtained by purposive sampling by prioritizing the completeness of the data provided on the Portal of the Directorate General of Fiscal Balance, Ministry Finance.

The research location that the researchers conducted was North Sumatra. The population in this study is the report on export and import data in 2017-2020. The source of research data comes from secondary data. Secondary data as a supporting tool for this research comes from various literature such as journals, relevant books, as well as online news that supports facts, BPS BAPENAS and BI.

RESULTS AND DISCUSSION

Descriptive Statistical Test Results

Table 4
Descriptive Analysis

Date: 06/16/23 Time: 11:20
Sample: 2012 2022

	Y	X1	X2	X3
Mean	2.028636	23.80682	66.48045	2.831591
Median	2.050000	19.53000	77.70000	3.020000
Maximum	2.520000	37.94000	92.25000	6.100000
Minimum	1.180000	15.48000	11.87000	1.230000
Std. Dev.	0.443839	7.781172	30.09048	1.383373
Skewness	-0.623365	0.615567	-1.188243	1.239478
Kurtosis	2.351766	1.611611	2.594816	4.039887
Jarque-Bera	3.619997	6.312743	10.65507	13.24874
Probability	0.163654	0.042580	0.004856	0.001328
Sum	89.26000	1047.500	2925.140	124.5900
Sum Sq. Dev.	8.470718	2603.505	38933.79	82.28999
Observations	44	44	44	44

Source: Eviews 10.

From Table 4, it can be seen that: 1) Exports have average value of 2.028636, lowest value is 1.180000, highest value is 2.52000, standard deviation is 8.470718; 2) Regional Gross Domestic Product has an average of 23.80682, the lowest value is 15.48000, the highest value is 37.94000, a standard deviation of 2603.505; 3) The exchange rate has an average of 66.48045, the lowest value is 11.87000, the highest value is 92.25000, the standard deviation is 38933.79; 4) Inflation has an average of 2.831591, lowest value is 1.23000, highest value is 6.10000, standard deviation is 82.28999.

Based on the test results above, it can be seen that the highest average value is the exchange rate value of 66.48045 with the lowest value of 11.87000 and the highest value of 92.25000 so that the standard deviation of the exchange rate variable is 38933.79.

Normality test

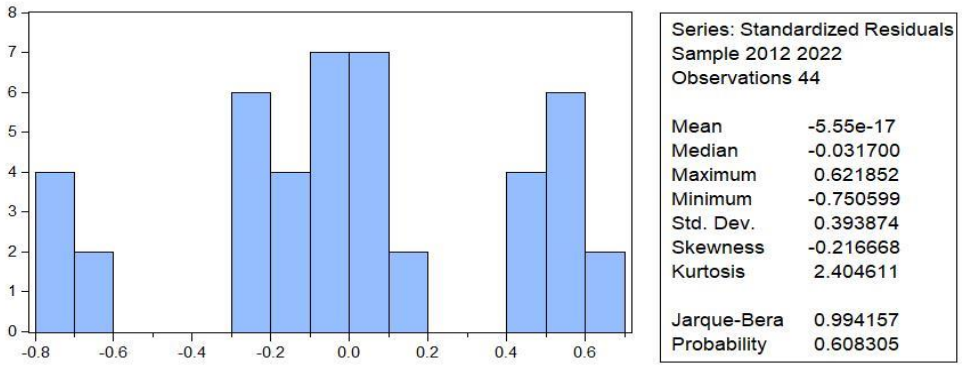

Figure 3
Normality Test
Source: Eviews 10.

From Figure 3, it can be seen that: 1) The probability value is 0.608305. So, it can be concluded that the probability value is > 0.05, namely (0.608305 > 0.05) so that this research is normally distributed; 2) The Jarque-Bera value is 0.994157. So, it can be concluded that the Jarque-Bera value is > 0.05, namely (0.994157 > 0.05) so that this research is normally distributed.

With this test it can be seen that each variable in this study, namely the variable Gross Domestic Product (X1) Exchange Rate (X2), Inflation (X3) and Exports (Y) is normally distributed with a Jarque Bera value of 0.608305 > 0.05. So, it can be concluded that this research can be continued in the next regression test.

Multicollinearity Test

Table 5
Multicollinearity Test

X1	1.000000	-0.139084	0.021683
X2	-0.139084	1.000000	-0.424899
X3	0.021683	-0.424899	1.000000

Source: Eviews 10.

Based on table 5. the multicollinearity test has Correlation Matrix values between variables X1 (1.0000), X2 (-0.139084) and X3 (0.021683), it can be shown that the results of the Correlation Matrix between variables X1, X2 & X3 are not greater than 0.8 so that the research data is not affected by multicollinearity.

Autocorrelation Test

Table 6
Autocorrelation Test

R-squared	0.097582	Mean dependent var	-0.001292
Adjusted R-squared	0.087443	S.D. dependent var	0.452413
S.E. of regression	0.432181	Akaike info criterion	1.174705
Sum squared resid	49.87036	Schwarz criterion	1.227873
Log likelihood	-155.1726	Hannan-Quinn criter.	1.196053
F-statistic	9.623928	Durbin-Watson stat	1.937822
Prob(F-statistic)	0.000005		

Source: Eviews 10.

From the results of the Durbin Watson regression stat, namely 1.937822. This explains that there are no autocorrelation symptoms because the Durbin Watson Stat value is between the range -2 and 2.

Based on this test, the researcher can carry out the next analysis, namely conducting a regression test on each research variable.

Common Effect Model (CEM) Approach

Table 7
Common Effect Model (CEM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.738089	0.373515	7.330605	0.0000
X1	-0.017269	0.008413	-2.052723	0.0496
X2	-0.006464	0.002441	-2.648806	0.0131
X3	0.045929	0.051958	0.883960	0.3842

R-squared	0.346795	Mean dependent var	2.032500
Adjusted R-squared	0.276809	S.D. dependent var	0.433909
S.E. of regression	0.368999	Akaike info criterion	0.960425
Sum squared resid	3.812494	Schwarz criterion	1.143642
Log likelihood	-11.36680	Hannan-Quinn criter.	1.021156
F-statistic	4.955195	Durbin-Watson stat	1.688733
Prob(F-statistic)	0.006962		

Source: Eviews 10.

Common Effect Model (CEM) combines cross section and time series data using the Ordinary Least Square (OLS) method in estimating the panel data model. This model is the simplest compared to the other two models.

The equations used in this model are as follows:

Export = α + β1 GDP + β2 Exchange rate + β3 Inflation + ε it

Based on the results of the Common Effect Model (CEM) test, it produces the following equation:

Export = 2.738089 – 0.017269 (GDP) – 0.006464 (Exchange rate) + 0.045929 (Inflation). The following is an analysis of the results of the equation above:

Constant = 2.738089. These results indicate that if there are no independent variables, namely gross domestic product (GDP), exchange rates and inflation, then the export value is 2.738089.

Gross Domestic Product (GDP) = - 0.017269. The regression coefficient of Gross Domestic Product (GDP) on the test is -0.017269. this means that the gross domestic product (GDP) has a negative influence on the export value of North Sumatra Province, so that if the gross domestic product increases by 1 unit, the export value of North Sumatra Province will decrease by -0.017269.

Exchange Rate (Exchange Rate) = - 0.006464. The regression coefficient of the exchange rate (exchange rate) on the test is -0.006464. this means that the exchange

rate (exchange rate) has a negative influence on export values in North Sumatra Province, so that if the exchange rate (exchange rate) increases by 1 unit, the export value of North Sumatra Province will decrease by -0.006464. **Inflation = 0.045929.** The inflation regression coefficient on the test is 0.045929. this means that inflation has a negative effect on export values in North Sumatra Province, so that if inflation increases by 1 unit, the export value of North Sumatra Province will increase by 0.045929.

In the table of estimation results using the general effects model (CEM), the Adjusted RS-squared coefficient of determination is 0.346795, meaning that the variables of gross domestic product (GDP), exchange rate (Exchange rate), inflation together are able to explain the export value variable. North Sumatra Province at 34.67% while 63.33% is explained by other variables.

Fixed Effect Model (FEM) Approach

The fixed effect model approach assumes that the intercept of each individual is different, while the slope between individuals is the same.

The equation used in this model is as follows:

Export = α + β1 GDP + β2 Exchange rate + β3 Inflation + ε it

The results obtained from data processing through the Eviews 10 software application are as follows:

Table 8
Fixed Effect Model (FEM)
Source: Eviews 10.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.795550	0.388514	7.195487	0.0000
X1	-0.023648	0.010982	-2.153308	0.0379
X2	-0.005663	0.002223	-2.547649	0.0151
X3	0.060940	0.047852	1.273508	0.2108
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.347243	Mean dependent var		2.028636
Adjusted R-squared	0.241390	S.D. dependent var		0.443839
S.E. of regression	0.386576	Akaike info criterion		1.081934
Sum squared resid	5.529321	Schwarz criterion		1.365783
Log likelihood	-16.80255	Hannan-Quinn criter.		1.187199
F-statistic	3.280442	Durbin-Watson stat		1.693665
Prob(F-statistic)	0.010912			

Based on the results of the Fixed Effect Model (FEM) test, it produces the following equation: Export = 2.795550 – 0.023648 (GDP) – 0.005663 (Exchange rate) + 0.060940 (Inflation). The following is an analysis of the results of the equation above:

Constant = 2.795550. These results indicate that if there are no independent variables consisting of gross domestic product (GDP), exchange rates and inflation, then the value of North Sumatra Province exports as the dependent variable is 2.795550.

Gross Domestic Product (GDP) = - 0.023648. The regression coefficient of Gross Domestic Product (GDP) on the test is -0.0236489. this means that the gross domestic product (GDP) has a negative influence on the value of exports in North Sumatra Province, so that if the gross domestic product increases by 1 unit, the export value of North Sumatra Province will decrease by -0.0236489.

Exchange Rate (Exchange Rate) = - 0.005663. The regression coefficient of the exchange rate (exchange rate) on the test is -0.005663. this means that the exchange rate (exchange rate) has a negative influence on export values in North Sumatra Province, so that if the exchange rate (exchange rate) increases by 1 unit, the export value of North Sumatra Province will decrease by -0.005663.

Inflation = 0.060940. The inflation regression coefficient on the test is 0.060940. this means that inflation has a negative effect on export values in North Sumatra Province, so that if inflation increases by 1 unit, the export value of North Sumatra Province will increase by 0.060940.

In the table of estimation results with the general effects model Fixed Effects Model (FEM), the Adjusted R S-squared coefficient of determination is 0.346795, meaning that the variables of gross domestic product (GDP), exchange rate (Exchange rate), inflation together are able to explain the export value variable of North Sumatra Province at 34.72%. while 65.28% is explained by other variables.

Random Effect Model (REM) Approach

This random effect model uses a disturbance variable (error term), this model estimates panel data where the disturbance variables may be related to each other over time and between individuals (Widarjono, 2007). This technique also takes into account that errors may be correlated throughout the time series and cross sections.

The equation used in this model is as follows:

Export = α + β1 GDP + β2 Exchange rate + β3 Inflation + ε it

The results obtained from data processing through the Eviews 10 software application are as follows:

Table 9
Random Effect Model (REM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.649609	0.248039	10.68223	0.0000
X1	-0.007073	0.007713	-0.917023	0.3645
X2	-0.004979	0.002265	-2.197997	0.0337
X3	0.080576	0.049277	1.635170	0.1097
Effects Specification				
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.404652	1.0000
Weighted Statistics				
R-squared	0.249085	Mean dependent var		2.028636
Adjusted R-squared	0.212455	S.D. dependent var		0.443839
S.E. of regression	0.393880	Sum squared resid		6.360791
F-statistic	6.800019	Durbin-Watson stat		1.778800
Prob(F-statistic)	0.002816			
Unweighted Statistics				
R-squared	0.249085	Mean dependent var		2.028636
Sum squared resid	6.360791	Durbin-Watson stat		1.778800

Based on the results of the Random Effect Model (REM) test, it produces the following equation:

Export = 2.649609 – 0.007073 (GDP) – 0.004979 (Exchange rate) + 0.080576 (Inflation).

The following is an analysis of the results of the equation above:

Constant = 2.649609. These results indicate that if there are no independent variables consisting of gross domestic product (GDP), exchange rates and inflation, then the value of exports of North Sumatra Province as the dependent variable is 2.649609.

Gross Domestic Product (GDP) = - 0.007073. The regression coefficient of Gross Domestic Product (GDP) on the test is -0.007073. this means that the gross domestic product (GDP) has a negative influence on the export value of North Sumatra

Province, so that if the gross domestic product increases by 1 unit, the export value of North Sumatra Province will decrease by -0.007073.

Exchange Rate (Exchange Rate) = - 0.004979. The regression coefficient of the exchange rate (exchange rate) on the test is -0.004979. this means that the exchange rate (exchange rate) has a negative influence on export values in North Sumatra Province, so that if the exchange rate (exchange rate) increases by 1 unit, the export value of North Sumatra Province will decrease by -0.004979.

Inflation = 0.080576. The inflation regression coefficient on the test is 0.080576. this means that inflation has a negative effect on export values in North Sumatra Province, so that if inflation increases by 1 unit, the export value of North Sumatra Province will increase by 0.080576.

In the table of estimation results with the general effects model Random Effects Model (REM), the Adjusted R S-squared coefficient of determination of 0.346795 means that the variables gross domestic product (GDP), exchange rate (Exchange rate), inflation together is able to explain the export value variable of North Sumatra Province by 34.72%. while 65.28% is explained by other variables.

Choose the Panel Data Method

To find out which model to use, it is necessary to carry out tests consisting of the Chow Test, Hausman Test, and Langrange Multiplier Test.

Chow test

Table 10
Chow Test

Redundant Fixed Effects Tests
Equation: MODEL FEM
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.611628	(3,37)	0.2032
Cross-section Chi-square	5.403755	3	0.1445

Source: Data Retrieved with Eviews.10 (2023).

Based on the results of the Chow test, the probability values of Cross Section F and Chi Square were 0.2032 and 0.1445 which were greater than alpha 0.05. This means that the value of the Cross Section F and Cross-section Chi-square is greater than 0.05 so that H0 is accepted which means accepting the Common Effect model and rejecting the Fixed Effect Model, then the appropriate model is the Common Effect model. Based on the results of the analysis of the Chow Test, the Common Effect Model was selected, so the next step is to carry out the Langrange Multipiler (LM) test. So that the following steps in determining the model then carry out the Langrange Multipiler (LM) test to determine which model is good between the Common Effect Model (CEM) and the Fixed Effect Model (FEM).

Langrange Multiplier Test (LM)

Table 11
Langrage Multiplier (LM) Test

Lagrange multiplier (LM) test for panel data
Date: 06/16/23 Time: 12:06
Sample: 2012 2022
Total panel observations: 32
Probability in ()

Null (no rand. effect) Alternative	Cross-section One-sided	Period One-sided	Both
Breusch-Pagan	0.324239 (0.5691)	3.136316 (0.0766)	3.460556 (0.0628)
Honda	-0.569420 (0.7155)	-1.770965 (0.9617)	-1.654902 (0.9510)
King-Wu	-0.569420 (0.7155)	-1.770965 (0.9617)	-1.446409 (0.9260)
GHM	-- --	-- --	0.000000 (0.7500)

Source: Data Retrieved with Eviews.10 (2023).

Based on the Langrangge Multipiler test, the Breusch-pagan value is 0.0628. This shows that the Breuch-pagan value is greater than the significance level of 0.05 so that H0 is accepted, namely accepting the Random Effect Model and rejecting the Common Effect Model. Based on the results of the Langrangge Multipiler Test analysis, the Random Effect Model was selected. From these results it is concluded that it is more appropriate to use the Random Effect Model (REM) model.

From the test results it can be concluded: a) From the Chow test the selected model is the Common Effect Model (CEM); b) Langrangge Multipiler test for the selected model Random Effect Model (REM); c) So, the capital used in this study is the Random Effect Model (REM).

Hypothesis Test

Testing the hypothesis in this study using the estimation results of the Random Effect Model (REM) regression model. This model is used to see the magnitude of the contribution of the independent (independent) variable in explaining the dependent (dependent) variable through the coefficient of determination, the t test and the F test.

Statistical tests in this study will be carried out by testing significant regression tests with panel data, testing the significance of partial regression coefficients individually (T Test), testing the partial regression coefficients as a whole or simultaneously (Test F) and analyzing the coefficient of determination (R2). Statistical values from the regression test with panel data T test, F test and the coefficient of determination (R2) can be seen as follows:

Regression Analysis with Panel Data

Table 12
Regression Results of Random Effect Model (REM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.649609	0.248039	10.68223	0.0000
X1	-0.007073	0.007713	-0.917023	0.3645
X2	-0.004979	0.002265	-2.197997	0.0337
X3	0.080576	0.049277	1.635170	0.1097

Source: Data Retrieved with Eviews.10 (2023).

The panel data regression models in this study are:

Y = 2.649609 – 0.007073 - 0.004979 + 0.080576 + e

Thus, the panel data regression results above can be interpreted as follows: 1) A constant of 2.649609 indicates that if the variables of Regional Gross Domestic Product (X1), Exchange Rate (X2), Inflation (X3) are equal or constant, the export value of North Sumatra Province (Y) is 2.649609; 2) Based on the Regional Gross Domestic Product variable (X1) the results of the regression test showed that the regional gross domestic product variable has a negative regression coefficient with a value of b = -0.007073 meaning that if there is an increase in the value of the regional gross domestic product variable (X1) by 1 point then there will be a decrease in the value of the export variable (Y) of -0.007073; 3) Based on the exchange rate variable (X2) the results of the regression test

showed that the exchange rate variable (X2) has a positive regression coefficient with a value of b = 0.004979 meaning that if the value of the exchange rate variable (X2) increases by 1 point, there will be an increase in the value of the export variable (Y) of 0.004979; 4) Based on the inflation variable (X3) the results of the regression test show that the inflation variable has a negative regression coefficient with a value of b = 0.0080576 meaning that if there is an increase in the value of the inflation variable (X3) by 1 point, there will be a decrease in the value of the export variable (Y) of 0.0080576.

Partial Test (t test)

Table 13
T-test Results (Partial) Random Effect Model (REM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.649609	0.248039	10.68223	0.0000
X1	-0.007073	0.007713	-0.917023	0.3645
X2	-0.004979	0.002265	-2.197997	0.0337
X3	0.080576	0.049277	1.635170	0.1097

Source: Data Retrieved with Eviews.10 (2023).

Based on Table 13 the results of eviews 9 processing using a partial test.

Regional Gross Domestic Product (X1) has an effect on Regional Exports.

From the results of the analysis, a significant value was obtained for the regional gross domestic product, namely 0.33645 > 0.05. Meanwhile, the tcount value is -0.917023 <1.652 (ttable). This shows that the regional gross domestic product has no effect and is not significant on the exports of North Sumatra Province. Thus, the hypothesis proposed in this study was rejected.

So, it can be concluded that the variable Gross Domestic Product (GDP) has no negative effect on exports in North Sumatra Province.

The Exchange Rate (X2) Has an Effect on Regional Exports.

From the results of the analysis, a significant value was obtained for regional exchange rates, namely 0.0337 <0.05. Meanwhile, the tcount value is -2.197997 > 1.652

(ttable). This shows that the exchange rate has a negative and significant effect on exports of North Sumatra Province. Thus, the hypothesis proposed in this study is accepted.

So, it can be concluded that the exchange rate variable has a negative effect on exports in North Sumatra Province.

Inflation (X3) affects Regional Exports.

From the analysis results obtained a significant value for regional inflation, namely 0.1097> 0.05. And the tcount value is 1.6351 <1.652 (ttable). This shows that inflation has no significant effect on exports of North Sumatra Province. Thus, the hypothesis proposed in this study was rejected.

So, it can be concluded that the inflation variable has no positive effect on exports in North Sumatra Province.

Simultaneous Test (Test F)

Testing the effect of all independent variables in the model can be done with the F test, the F statistical test basically shows whether all the independent variables included in the model have a simultaneous effect on the dependent variable. According to Ghozali (2005) said that the F statistical test basically shows whether all the independent variables included in the model have a joint effect on the dependent variable.

Table 14
F Test Results (Simultaneous)

Weighted Statistics			
R-squared	0.249085	Mean dependent var	2.028636
Adjusted R-squared	0.212455	S.D. dependent var	0.443839
S.E. of regression	0.393880	Sum squared resid	6.360791
F-statistic	6.800019	Durbin-Watson stat	1.778800
Prob(F-statistic)	0.002816		
Unweighted Statistics			
R-squared	0.249085	Mean dependent var	2.028636
Sum squared resid	6.360791	Durbin-Watson stat	1.778800

Source: Data Retrieved with Eviews.10 (2023).

Based on table 4.12 it can be seen that the probability (F-statistic) of the firm value variable is 0.002816 <0.05. And the F-Statistics value is 6.800019 (Fcount) > 2.64 (Ftable). Based on the results of the simultaneous test, it can be seen that the Regional Gross Domestic Product (X1), Exchange Rate (X2) and Inflation (X3) have a positive and significant effect on Regional Exports of North Sumatra together.

Therefore, it can be concluded that all independent variables (free), namely Gross Domestic Product (GDP), Exchange Rate (Exchange) and Inflation simultaneously affect exports as the dependent variable (tied).

Coefficient of Determination (R2)

A value that is close to one means that the independent variables provide almost all the information needed to predict the variation of the dependent variable (Ghozali, 2011:97)

Table 15

Test Results for the Coefficient of Determination (R2)

Weighted Statistics			
R-squared	0.249085	Mean dependent var	2.028636
Adjusted R-squared	0.212455	S.D. dependent var	0.443839
S.E. of regression	0.393880	Sum squared resid	6.360791
F-statistic	6.800019	Durbin-Watson stat	1.778800
Prob(F-statistic)	0.002816		
Unweighted Statistics			
R-squared	0.249085	Mean dependent var	2.028636
Sum squared resid	6.360791	Durbin-Watson stat	1.778800

Source: Data Retrieved with Eviews.10 (2023).

The R2 value is 0.2490 or 24.90%. This shows that the Regional Gross Domestic Product, Exchange Rate and Inflation variables can only explain the regional export variable of only 24.90%. While the remaining 75.10% is explained by other variables outside the regression model in this study.

Regional Gross Regional Domestic Product (GRDP) Has an Effect on Exports

From the results of the analysis, it was obtained that the significance value of regional gross domestic product was 0.33645 > 0.05. Meanwhile, the tcount value is -0.917023 <1.652 (ttable). This shows that the regional gross domestic product has no effect and is not significant on the exports of North Sumatra Province. Thus, the hypothesis proposed in this study was rejected.

Basically, Gross Domestic Product (GDP) is the value of goods and services produced by factors of production within the country in a given year, or the total production (output) produced by the government. GDP is the value of goods and services produced in a country in a certain period.

Gross Domestic Product is a concept in calculating national income, through several components from an area, namely: 1) Consumption, consumption, namely spending by households and companies on various goods and services. Although this is an individual household decision in this case classified as a micro-economic decision, it will have an impact on the macro-economy where household decisions in consuming it affect behavior in the short and long term in macro analysis. 2) Investment Investment is a purchase in the form of tools, capital, trade inventory/inventory and business structure, including the purchase of a new house by a household. In a narrow sense investment is defined as investment or capital formation, whereas in the macro context investment is spending or spending on capital goods and production equipment to add to the goods and services available in the economy. 3) Government spending Government spending can be in the form of purchases of various goods and services by all institutions and levels of government (central, regional, and so on). 4) Net exports Represent purchases by foreigners of various goods and services produced domestically (exports) minus domestic purchases of various goods and services produced abroad. Every sales transaction of domestic products to third parties. foreigners will increase net exports. 3) Government spending Government spending can be in the form of purchases of various goods and services by all institutions and levels of government (central, regional, and so on). 4) Net exports Represent purchases by foreigners of various goods and services produced domestically (exports) reduced by domestic purchases of various goods and services produced abroad. Every sales transaction of domestic products to third parties. foreigners will increase net exports. 3) Government spending Government spending can be in the form of purchases of various goods and services by all institutions and levels of government (central, regional, and so on). 4) Net exports Represent purchases by foreigners of various goods and services produced domestically (exports) reduced by domestic purchases of various goods and services produced abroad. Every sales transaction of domestic products to third parties. foreigners will increase net exports. Every sales transaction of domestic products to third

parties. foreigners will increase net exports. Every sales transaction of domestic products to third parties. foreigners will increase net exports.

Exchange Rates Affect Exports

From the results of the analysis, a significant value was obtained for regional exchange rates, namely 0.0337 <0.05. Meanwhile, the tcount value is -2.197997 > 1.652 (ttable). This shows that the exchange rate has a negative and significant effect on exports of North Sumatra Province. Thus, the hypothesis proposed in this study is accepted.

In general, the exchange rate is one of the most important things in an open economy, because it has a very large influence on the current account balance and other macroeconomic variables. The exchange rate describes the price of a currency against another country's currency, it is also the price of an asset or price. Nominal exchange rates are the rates a person uses when exchanging one country's currency for another country's currency. So, the rupiah exchange rate is the value of one rupiah currency that is exchanged into another country's currency. Changes in the overall price level Changes in prices occur not only from export or import products but from all prices of goods in a country, this causes inflation. In Islam, the exchange rate is defined as *sarf*.

Sometimes the exchange of currency is an exchange of currency for other similar currencies, such as the exchange of gold for gold, silver for silver. Sometimes the exchange of currency with other currencies of different types, such as the exchange of gold for silver or silver for gold. The conditions for exchanging currency with other similar currencies are exactly the same in weight and type and may not exaggerate one another at all. Because, such action is called usury and the law is unlawful. The exchange rate is determined based on market prices. Meanwhile, changes in currency exchange rates between the same currency, which are taken by countries of two different types, are not dangerous. Because, the status is the same as changes in the price of goods. If there is a change in the price level in a country, then inflation will push the price of goods in that country to be more expensive than the price of goods in other countries. This causes the price of domestic goods to increase, while the price of foreign goods entering the domestic market will be cheaper and become an attractive choice for consumers. So, it can be seen that the exchange rate or currency value affects exports of North Sumatra. The research is in accordance with research conducted by Rebekah, et al with the title Effects of Exports,

Imports, and Inflation on the Rupiah Exchange Rate in Indonesia, as for the results of the research.

And also, research conducted by Made Arynna Dwi Prabayanthi and Ida Ayu Nyoman Saskara, Analysis of Competitiveness and Factors Influencing Indonesian Jewelry Exports, with research results partially the Exchange Rate (X2) has a negative and significant effect on the competitiveness of Indonesian jewelry exports to destination countries in 2010-2018 as seen from the prob. t 0.0434 < 0.10 significance level assuming ceteris paribus.

The exchange rate becomes very important, if a country has to carry out economic transactions with other countries. This is because in this process different currencies are used, for example, between Indonesia and the United States. America must buy rupiah to buy goods or carry out economic activities in Indonesia, and vice versa. In simple terms, the exchange rate can be interpreted as the price of a domestic currency against another country's currency. The price of a currency against another currency is called the exchange rate or exchange rate. The exchange rate is one of the most important things in an open economy, because it has a very large influence on the current account balance and other macroeconomic variables. The exchange rate describes the price of a currency against another country's currency,

Inflation Affects Exports

From the analysis results obtained a significant value for regional inflation, namely 0.1097> 0.05. And the tcount value is 1.6351 <1.652 (ttable). This shows that inflation has no effect on exports of North Sumatra Province. Thus, the hypothesis proposed in this study was rejected.

Inflation occurs when there is an increase in prices, is general in nature, takes place continuously and occurs simultaneously. The price increase is not intended to occur momentarily. Price increases under certain conditions are not a problem because prices will return to normal, so if there is a price increase that is only temporary, it cannot be said to be inflation. Inflation is also related to price increases in general, meaning that price increases do not only occur for one particular type of good or service, but that price increase includes a group of goods consumed by the public, moreover, this increase will affect the prices of other goods on the market, while continuing means that the price increase lasts only for a

moment, once, twice, then subsides again, so it is not called inflation. The implication of inflation is basically due to the reduced competitiveness that occurs because the price of exported goods is getting more expensive. Although it can make it difficult for exporters and countries. The country suffers losses because the competitiveness of exported goods decreases which results in a reduced number of sales and of course the foreign exchange earned is also getting smaller. This is consistent with the results of research where inflation has a negative effect on exports, where if inflation is high then the value of exports decreases due to rising prices.

Inflation is an economic event that often occurs even though we never want it to. Milton Friendman said inflation can happen anywhere and is always a monetary phenomenon. It is considered a monetary phenomenon due to a decrease in the value of a monetary unit for a commodity. Keynesian economists believe that inflation can occur independently of monetary conditions. If defined, inflation is an increase in the price of goods and services in general and continuously. Inflation occurs when there is an increase in prices, is general in nature, takes place continuously and occurs simultaneously.

The implication that is experienced by a region if there is inflation is that reduced competitiveness occurs because the price of exported goods becomes more expensive. Although it can make it difficult for exporters and countries. The country suffers losses because the competitiveness of exported goods decreases which results in a reduced number of sales and of course the foreign exchange earned is also getting smaller. This inflation usually occurs when the workforce is full and economic growth is running rapidly. With a rapid rate of economic growth that encourages an increase in demand for goods or services while the goods offered remain constant because production capacity is maximized thus pushing prices up continuously.

However, the results of the research are in accordance with the research conducted by Rebekah, et al with the title Effects of Exports, Imports, and Inflation on the Rupiah Exchange Rate in Indonesia, as for the results of the research. negative and not significant to the rupiah exchange rate variable against the United States dollar. with a coefficient value of -0.023387 and a probability of 0.1387 at a significant level $\alpha = 0.05$ and a statistical value of -1.507251.

And also, in accordance with research conducted by partially destination country inflation (X3) has a negative and significant effect on the competitiveness of Indonesian jewelry exports to destination countries in 2010-2018 as seen from the prob. t 0.0538 < 0.10 significance level assuming ceteris paribus. Made Arynna Dwi Prabayanthi and Ida Ayu Nyoman Saskara, Analysis of Competitiveness and Factors Affecting Indonesian Jewelry Exports, with research results RCA values for the nine main destination countries for Indonesian jewelry exports show a value greater than 1 which indicates strong competitiveness between other countries are Switzerland, Singapore, Hong Kong, the United Arab Emirates, the United States, South Africa, India, Italy and Germany.

However, this research is not in line with the research conducted by Nabila Nurrachm, Lorentino and Rian with the research title The Effects of Labor Supply, Inflation, and Exports on Regional Minimum Wages in Indonesia in 1997-2018. The results of this study are that the inflation variable has no insignificant effect on Indonesia's regional minimum wage in 1997-2018. This is due to the low public demand for goods and services.

Regional Gross Regional Domestic Product (GRDP), Exchange Rates and Inflation Affect Exports

From the results of the analysis, it is known that the probability (F-statistic) of the firm value variable is 0.002816 <0.05. And the F-Statistics value is 6.800019 (Fcount) > 2.64 (Ftable). Based on the results of the simultaneous test it can be seen that the Regional Gross Domestic Product (X1), Exchange Rate (X2) and Inflation (X3) have a positive and significant effect on Regional Exports of North Sumatra together. The R2 value is 0.2619 or 26.19%. This shows that the variables of Regional Gross Domestic Product, Exchange Rate and Inflation can only explain the regional export variable of only 24.90%. While the remaining 75.10% is explained by other variables outside the regression model in this study. This research is in line with research conducted by Made Arynna Dwi Prabayanthi and Ida Ayu Nyoman Saskara, stated that Simultaneously GDP per capita of the destination country, exchange rate, and inflation of the destination country had a significant effect on the competitiveness of Indonesian jewelry exports to the main destination countries in 2010-2018 as seen from the prob. F 0.000017 < 0.10. So, it can be concluded that the

Regional Gross Domestic Product (X1), Exchange Rate (X2) and Inflation (X3) have a positive and significant effect on Regional Exports of North Sumatra simultaneously.

The research that is in accordance with this research is the research conducted by Rebekah, et al with the title Effects of Exports, Imports, and Inflation on the Rupiah Exchange Rate in Indonesia, as for the results of the research. 1) the export and import variables (net exports) have a negative and significant effect on the rupiah exchange rate variable against the United States dollar, with a coefficient value of -0.441756 and a probability of 0.0001 at a significant level of $\alpha = 0.05$ and a statistical value of -4.742329; (2) the inflation variable has a negative and insignificant effect on the rupiah exchange rate variable against the United States dollar. with a coefficient value of -0.023387 and a probability of 0.1387 at a significant level $\alpha = 0, 05$ and a statistical value of -1.507251; (3) overall, the variables of exports and inflation together have a significant effect on the exchange rate of the rupiah against the US dollar (Rebekah, 2017).

This is in accordance with research conducted by Suharyon Suharyon with the research title Potential Efficiency of Areca Marketing on Socio-Economics in Betara District, West Tanjung Jabung Regency, Jambi Province, while the results in the study stated that the plantation sector is one of the sub-sectors that has an important contribution in terms of creating added value. reflected in its contribution to gross domestic product (GDP). Several plantation commodities that are considered important in Indonesia, such as: rubber, palm oil, coconut, coffee, areca nut, cocoa, tea, and sugarcane are the leading commodities that regularly contribute foreign exchange to the country. Oil palm, rubber and areca nut are plant commodities that are exported to various other countries in need.

The research conducted by Hasibuan, et al with the research title analysis of the factors that influence the growth of the agricultural sector in the province of North Sumatra, while the results of this study are that the agricultural sector is one of the supporting sectors of the economy in North Sumatra Province. In 2018, the agricultural sector (food crops, plantations, forestry, livestock and fisheries) is the sector that contributes the largest added value to the Gross Regional Domestic Product in the province of North Sumatra. namely 21.40 percent, followed by the manufacturing industry sector of 20.29. Therefore, it is necessary to conduct research on the factors that influence the growth of the agricultural sector in North Sumatra Province. The data used is secondary data obtained from the

Central Bureau of Statistics (BPS) of North Sumatra Province from 1985-2018. The analytical method used is multiple linear regression. The results of the study show that labor and agricultural imports have a positive and not significant effect on the growth of the agricultural sector. Meanwhile, the area of agricultural land, agricultural exports, and agricultural investment have a positive and significant effect on the growth of the agricultural sector. Increasing land area, exports and agricultural investment certainly have a good influence on the growth of the agricultural sector than farmers who have narrow land and low investment. It is expected that local and central governments can foster a conducive agricultural investment climate in accordance with applicable regulations. The analytical method used is multiple linear regression. The results of the study show that labor and agricultural imports have a positive and not significant effect on the growth of the agricultural sector. Meanwhile, the area of agricultural land, agricultural exports, and agricultural investment have a positive and significant effect on the growth of the agricultural sector. Increasing land area, exports and agricultural investment certainly have a good influence on the growth of the agricultural sector than farmers who have narrow land and low investment. It is expected that local and central governments can foster a conducive agricultural investment climate in accordance with applicable regulations. The analytical method used is multiple linear regression. The results of the study show that labor and agricultural imports have a positive and not significant effect on the growth of the agricultural sector. Meanwhile, the area of agricultural land, agricultural exports, and agricultural investment have a positive and significant effect on the growth of the agricultural sector. Increasing land area, exports and agricultural investment certainly have a good influence on the growth of the agricultural sector than farmers who have narrow land and low investment. It is expected that local and central governments can foster a conducive agricultural investment climate in accordance with applicable regulations. The results of the study show that labor and agricultural imports have a positive and not significant effect on the growth of the agricultural sector. Meanwhile, the area of agricultural land, agricultural exports, and agricultural investment have a positive and significant effect on the growth of the agricultural sector. Increasing land area, exports and agricultural investment certainly have a good influence on the growth of the agricultural sector than farmers who have narrow land and low investment. It is expected that local and

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CONCLUSION

Regional Gross Domestic Product has no effect on exports of North Sumatra. So, it can be concluded that if the production value of a country has increased, it is likely that the country is able to increase export activities, and vice versa. However, the economies of developing countries are oriented more towards the production of primary goods (agricultural products, fuel, forest products and raw materials) than towards secondary goods (manufacturing) and tertiary goods (services).

The exchange rate has a negative and significant effect on the exports of North Sumatra. Third, inflation has no effect on North Sumatra's exports. The four Regional Gross Domestic Products, Exchange Rates and Inflation have significant and significant effects on North Sumatra's exports.

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