THE INFLUENCE OF OIL AND GAS EXPORTS, PALM OIL EXPORTS AND AUTOMOTIVE EXPORTS ON INDONESIA'S ECONOMIC GROWTH

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ABSTRACT

This study aims to determine the impact of oil and gas, palm oil, and automotive exports on Indonesia's economic growth. The research was conducted within the oil and gas, agriculture, and industrial sectors in Indonesia between 2012 and 2021. The independent variables in this study are oil and gas exports, palm oil exports and automotive exports, while the dependent variable is economic growth, as measured by Indonesian GDP. This study uses quantitative methods and purposive sampling. The data used were obtained indirectly (i.e. secondarily) through intermediaries or internet media. Multiple linear regression analysis, a test of the classical assumptions, descriptive analysis, and hypothesis testing were used to analyze the data using the SPSS software. The study's findings will demonstrate whether or not Indonesia's economic growth is impacted in any way by the export value of petroleum, gas, palm oil, and automobile commodities. Additionally, it will demonstrate whether these three exports had no concurrent impact on Indonesia's economic expansion between 2012 and 2021.

Keywords : Oil and Gas Commodity Exports; Palm Oil Commodity Exports; Automotive Exports, Economic Growth

ABSTRAK

Studi ini bertujuan untuk mengetahui dampak ekspor migas, minyak sawit, dan otomotif terhadap pertumbuhan ekonomi Indonesia. Penelitian ini dilakukan di sektor migas, pertanian, dan industri di Indonesia antara tahun 2012 dan 2021. Variabel independen dalam studi ini adalah ekspor migas, ekspor minyak sawit, dan ekspor otomotif, sedangkan variabel dependennya adalah pertumbuhan ekonomi, yang diukur dengan PDB Indonesia. Studi ini menggunakan metode kuantitatif dan pengambilan sampel purposif. Data yang digunakan diperoleh secara tidak langsung (sekunder) melalui perantara atau media internet. Data dianalisis menggunakan analisis deskriptif, uji asumsi klasik, analisis regresi linier berganda, dan pengujian hipotesis menggunakan program SPSS. Hasil studi ini akan menunjukkan apakah nilai ekspor komoditas migas, minyak sawit, dan otomotif berpengaruh secara parsial terhadap pertumbuhan ekonomi di Indonesia atau tidak. Studi ini juga akan menunjukkan apakah ketiga produk ekspor ini tidak berpengaruh secara simultan terhadap pertumbuhan ekonomi di Indonesia untuk periode 2012–2021.

Kata Kunci: Ekspor Komoditas Migas; Ekspor Komoditas Kelapa Sawit; Ekspor Otomotif; Pertumbuhan Ekonomi

INTRODUCTION

Economic growth provides a clear indication of the effectiveness of the development policies implemented, particularly in the economic sector. In the long term, economic growth poses an economic problem. It is also related to the process of increasing the production of goods and services in economic activities within society. According to Untoro (2010), economic growth involves the development of economic activities that cause the production of goods and services, and therefore the prosperity, of society to increase in the long term. In 2009, Indonesia experienced a crisis for the second time (after the 1997–98 financial crisis), caused by the economic crisis in the United States, which then spread to other countries worldwide. Despite this, Indonesia recovered quickly. The country is endowed with abundant natural resources, including minerals, agricultural produce, oil and gas.

Import and export activities play an important role in a country's economy. Exporting involves legally transporting goods, commodities or services from one country to another, usually as part of trade. In general, the export process involves removing goods or commodities from the country to enter other countries, in accordance with government procedures.

The export of large quantities of goods generally requires the intervention of customs authorities in both the country of origin and the country of destination. Exports are an important part of international trade, as opposed to imports. Since 1983, Indonesia has been encouraged to prioritise exports. Since then, exports have become important for spurring economic growth, as the industrialisation strategy has shifted from emphasising import substitution industries to promoting export industries.

In the last four years, Indonesia's export revenues have continued to decline due to the global economic slowdown, with economic growth falling from 5.4 percent in 2010 to 3.3 percent in 2013. This decline in export earnings is inseparable from the sectors that support export performance: the oil and gas sector, and the non-oil and gas sector. These sectors play a role in increasing and decreasing total exports, which support the economy. According to Ministry of Industry data, Indonesia's exports over the past four years have been dominated by the non-oil and gas sector, particularly the industrial sector. Despite declining in 2015 due to the global economic slowdown, exports from the industrial sector still accounted for more than 66 percent of Indonesia's total exports. This demonstrates the fundamental role of the industrial sector in supporting the economy and its significant contribution to the country's economy. As the largest contributor to non-oil and gas sector export earnings, the industrial sector has ranked first for the last four years, contributing more than 60 percent each year. The ten industrial product groups with the highest value in 2015 included palm oil processing, iron and steel machinery and automotive products, textiles, electronics, rubber processing, food and beverages, pulp and paper, wood processing, gold processing and shoes and footwear. In 2015, industrial exports were dominated by exports from the palm oil processing industry, which ranked first with a value of US$20.75 billion. The steel, machinery and automotive industry ranked second with a total export value of US$14.46 billion. These two industrial product groups play a significant role in the fluctuation of Indonesia's exports.

Based on the above description, the problem to be identified in this study is as follows: (1) What effect do oil and gas exports have on economic growth in Indonesia as recorded by Badan Pusat Statistik (BPS) between 2012 and 2021?; (2) What effect do palm oil exports have on economic growth in Indonesia as recorded by the Badan Pusat Statistik (BPS) between 2012 and 2021?; (3) What effect do automotive exports have on economic growth in Indonesia as recorded by the Badan Pusat Statistik (BPS) between 2012 and 2021?; (4) What effect do oil and gas, palm oil and automotive exports have on economic growth in Indonesia as recorded by the Badan Pusat Statistik (BPS) between 2012 and 2021?

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

International Trade Theory

Concepts about international trade have emerged since the seventeenth and eighteenth centuries. These centuries saw the rise of an economic philosophy called mercantilism. Adherents of mercantilism argued that the only way for a country to become rich and powerful was to export as much as possible and import as little as possible (Salvatore, 1997). Subsequently, several theories on international trade emerged, including:

a. Absolute Advantage Theory

The theory of absolute advantage was first coined by Adam Smith. According to Adam Smith, trade between two countries is based on absolute advantage, i.e. if a country is more efficient than another country in producing a commodity, but less efficient than another country in producing another commodity, then both countries can benefit by specializing and producing commodities that have absolute advantages and exchanging them for other commodities that have absolute disadvantages (Salvatore, 1997). Through this process, resources in both countries can be used in the most efficient way. The output produced will then increase.

b. Theory of Comparative Advantage

According to David Ricardo in his 1817 book Principle of Political Economy and Taxation (Salvatore, 1997), even if a country is less efficient than (or has an absolute disadvantage) with another country in producing two commodities, there is still a basis for trade that benefits both parties. The country should specialize in producing and exporting the commodity that has a smaller absolute loss, and importing the commodity that has a larger absolute loss.

c. Factor Proportion Theory of Production.

The Heckscher-Ohlin (H-O) theory has two important conditions as the basis for the emergence of international trade, namely the availability of factors of production and the intensity in the use of factors of production or the proportion of factors of production. according to Heckscher-Ohlin, a country will trade with other countries because the country has a comparative advantage, namely superiority in technology and superiority in factors of production. The basis of comparative advantage is: factor endowment, which is the ownership of factors of production in a country, and factor intensity, which is the technology used in the production process, whether labor intensity or capital intensity.

d. Competitive Advantage Theory

According to Michael E. Porter (1990) The Competitive Advantage of Nation is about the absence of direct correlation between two factors of production (high natural resources and cheap human resources) owned by a country to be utilized into competitiveness in trade. Porter revealed that there are four main attributes that determine why certain industries in a country can achieve international success, the four attributes include: conditions of production factors; conditions of domestic demand and quality demands; the existence of supporting industries; and conditions of competition strategy and corporate structure in the country Countries that are successful on an international scale are generally supported by good conditions of production factors, high domestic demand and quality demands, advanced upstream or downstream industries and intense domestic competition. Competitive advantages that are only supported by 1/2 of the attributes usually will not be able to survive, because the four attributes interact positively in a successful country. In addition to the four attributes above, the role of government is also a significant variable.

e. Demand and Supply Trade Theory

The premise of demand theory and supply theory in international trade is that trade between two countries occurs due to differences in demand and supply. The factors that cause international trade to occur are due to differences in demand and supply of a country. This difference occurs because: (a) not all countries have and are able to produce traded commodities, because the natural factors of the country are not favorable, such as geographical location and earth content, and (b) differences in the ability of a country to absorb certain commodities at a more efficient level.

Previous Research

See Table 1

Research Hypothesis

1. The Effect of Oil and Gas Exports on Indonesia's Economic Growth
2. The Effect of Palm Oil Exports on Indonesia's Economic Growth
3. The Effect of Automotive Exports on Indonesia's Economic Growth
4. The effect of oil and gas, palm oil, and automotive exports on economic growth in Indonesia.

RESEARCH METHODS

Method is a method of work that can be used to obtain something. While the research method can be interpreted as a work procedure in the research process, both in searching for data or disclosing existing phenomena (Zulkarnaen, W., et al., 2020:229). The object of this study is to analyze the effect of oil and gas exports, palm oil exports, automotive exports on economic growth in Indonesia. This study uses export data on the agricultural, plantation, industrial and service sectors registered with BPS for the period 2012-2021. This research method uses quantitative data and verification descriptive statistics. The type of data used is quantitative data, and secondary data is used in the form of documentation of oil and gas export data, palm oil exports, and automotive

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exports published by BPS. The population in this study is Indonesian exports in the agriculture, plantation, industry and service sectors registered with the Central Statistics Agency (BPS). The samples in this study are oil and gas exports, palm oil exports, and automotive exports at the Central Statistics Agency (BPS) for the observation period 2012-2021. The samples used in this study are Indonesian exports that meet certain criteria. The following are some of the criteria used as samples in the study, namely (1) Indonesian export data registered with BPS during the 2012-2021 period; (2) Data included in the agriculture, plantation, industry and service sectors released in the 2012-2021 period; (3) Indonesian GDP data released in the 2012-2021 period; and (4) Indonesian exports that have data in accordance with the variables studied with a total of 40 observations in this study. The dependent variable used by the author in this study is economic growth in Indonesia (GDP at constant prices). The independent variables used in this study include:

1. Oil and gas exports

   Oil and gas exports are one of the sales from Indonesia to foreign countries in the form of oil and gas. In this study, the examiner used oil and gas exports as an independent variable 1 which is expressed in units of dollars (USD).
2. Palm Oil Exports

   Palm oil exports are sales of Indonesian palm oil abroad which are included in the agricultural and plantation sectors. In this study, testers used palm oil exports as an independent variable 2 which is expressed in units of dollars (USD).
3. Automotive Exports

   Automotive exports are Indonesian automotive sales abroad which can be in the form of two or more wheeled vehicles, as well as their components. In this study, the examiner used automotive exports as an independent variable 3 which is expressed in units of dollars (USD).

RESULT AND DISCUSSION

Indonesian Economy

Economic growth is one indicator of successful development in an economy. The welfare and progress of an economy is determined by the amount of growth indicated by changes in national output. Economic growth as a process of increasing output over time is an important indicator to measure the success of a country's development (Todaro, 2005).

Based on the table 2, Indonesia's export data is highest in the oil and gas sector while the lowest exports are in the automotive sector. It can also be seen that all sectors from 2012-2021 have a fairly significant percentage level, namely there is an increase and decrease in export data, especially in 2020 experiencing a significant decline due to the impact of covid-19 except in the palm oil sector which has increased every year. This shows that the end of the covid pandemic in 2020-2021 has an effect on the decrease and increase in the value of Indonesian exports.

Descriptive Statistical Test Results

The data is displayed in table 3 below after the bibliography above shows that the amount of data used in this study is 10 which is taken from the annual reports on economic growth, oil and gas exports, palm oil exports, and automotive exports registered with BPS in 2012-2021. Economic growth data seen from GDP shows an average value of 993.5800 with a standard deviation of 107.59, the average value of oil and gas exports is 19.6510 with a standard deviation of 9.93, the average value of palm oil exports is 18.7130 with a standard deviation of 3.76, and the average value of automotive exports is 3.1980 with a standard deviation of 0.60.

Hypothesis Test Results

See table 5.

$Y = a + b_1x_1 + b_2x_2 + b_3x_3$

$Y = 493.395 - 2.098 + 10.458 + 108.10$

From The data is displayed in table 4 below after the bibliography. of linear regression results, it can be seen that the t count generated from the oil and gas export variable is -0.972> t table -1.85955 with a significance value of 0.368> 0.05 so it can be concluded that oil and gas exports have no effect and are not significant to Indonesia's economic growth, for the palm oil export variable is 2.273> 1.85955 with a significant value of 0.063> 0.05 so it can be concluded that palm oil exports have an insignificant effect on Indonesia's economic growth. . Meanwhile, the automotive export variable is 2.966> 1.85955 with a significant value of 0.025 <0.05 so it can be concluded that automotive exports have a significant effect on Indonesia's economic growth.

From the results of the F test, it can be seen that the calculated F value is 12,192 with a sig value of 0.006 therefore, the calculated F value> F table of (4.74) and sig value <0.006, simultaneously affecting economic growth.

Based on the table above, the R Square number (coefficient of determination) is 0.859 or 85%. This can be explained that Indonesia's economic growth is affected by oil and gas exports, palm oil exports and automotive exports by 85%, the remainder is affected by additional elements.

CONCLUSION

Drawing from the findings of the research on export analysis related to economic sectors in Indonesia. With the object of research on petroleum and natural gas shipments , palm petroleum shipments, and automotive exports on Indonesia's economic growth in 2012-2021. From the results of regression testing, conclusions can be drawn, namely:

1. Based on the results of the t test analysis, oil and gas exports have no effect on economic growth in Indonesia registered with BPS for the period 2012-2021.
2. Based on the results of the t test analysis, palm oil exports have an effect on economic growth in Indonesia registered with BPS for the 2012-2021 period.
3. Based on the results of the t test analysis, automotive exports have an effect on economic growth in Indonesia listed in BPS for the 2012-2021 period.
4. The exports that have the most influence on economic growth in Indonesia are automotive exports, because the t-test value has a significant effect on economic growth in Indonesia registered with BPS for the period 2012-2021.

Limitations

The limitations in writing this research are the difficulty in finding analytical data and the difficulty in changing the value of the economic sector used from trillion USD to billion USD.

Suggestion

For further research it is recommended to further develop this research in order to find out the significant influence of the economic sector in this case oil and gas exports, palm oil exports, and automotive exports on Indonesia's economic growth.

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TABLE

Table 1. Previous Research

Journal Title	Author	Country	Unit of analysis
The contribution of the agricultural sector, mining sector, and manufacturing sector to economic growth in the province of West Nusa Tenggara in 2010-2016.	Siti Nur Hidayati	Indonesia	Analyzing the agricultural sector, mining sector and industrial sector on economic growth in West Nusa Tenggara
The effect of oil and gas and non-oil and gas exports on the position of foreign exchange reserves in Indonesia	M. Umar Maya Putra, Syafrida Damani	Indonesia	Analyzing using Multiple Linear Regression with the results between independent variables (Oil and Gas Exports (X1) and Non-Oil and Gas Exports (X2)) and the dependent variable (Foreign Exchange Reserves (Y)) using secondary data sourced from the Central Statistics Agency for the period 2005 to 2012.
The effect of oil and gas exports, foreign investment, foreign debt, and inflation on Indonesia's economic growth	Insyai Rina Warer, and Putu Wiwin Setyari	Indonesia	Partial and simultaneous influence of oil and gas exports, foreign capital investment, foreign debt, and inflation on Indonesia's economic growth in 1975-2019.
Analysis of palm oil exports in Indonesia ega waldo	Student of Development Economics Study Program, Fak. Economics and Business Jambi University	Indonesia	- The development of the export value of Indonesian palm oil in 2000-2013. - The effect of export prices, exchange rates and production on the export value of Indonesian palm oil in 2000-2013.
EXPORT ANALYSIS OF STEEL, MACHINERY, AND AUTOMOTIVE INDUSTRIES (Empirical Study of Indonesian Exports to Singapore, Malaysia, Thailand, Philippines, and Japan)	Tatik Andriani. Nugroho Suryo Bintoro	Indonesia	To analyze the determinants of export demand and supply in the Indonesian steel, machinery, and automotive industries to Singapore, Malaysia, Thailand, the Philippines, and Japan.
Analysis of the effect of oil and gas exports and non-oil and gas exports on economic growth Indonesia	Dinda risa, naura salsabila	Indonesia	Multiple Linear Regression Analysis economic growth since 2016 has continued to increase. The highest economic growth was in 2018 at 5.17% and in 2020 predicted growth

Tabel 2. Oil and gas exports, palm oil exports, automotive exports, and Indonesia's GDP (billion US$)

PERIODE	VARIABLE			
	EKSPOR MIGAS	EKSPOR KELAPA SAWIT	EKSPOR OTOMOTIF	PDB INDONESIA
2012	36.98	18.46	2.55	917.90
2013	32.63	16.79	2.50	912.50
2014	30.02	18.62	2.92	890.80
2015	18.57	16.43	2.70	860.90
2016	13.11	15.97	2.90	931.90
2017	15.74	20.34	3.53	1015.60
2018	17.17	17.90	3.72	1042.30
2019	11.79	15.57	4.30	1119.10
2020	8.25	18.44	3.04	1058.70
2021	12.25	28.61	3.82	1186.10

Source: Badan Pusat Statistik 2022

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Table 3. Descriptive Statistics

	Mean	Std. Deviation	N
pertumbuhan_ekonomi	993.5800	107.59591	10
ekspor_migas	19.6510	9.93435	10
ekspor_kelapa_sawit	18.7130	3.76709	10
ekspor_otomotif	3.1980	.60829	10

Source: Research Data, 2022

Table 4. Regression Result

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95,0% Confidence Interval for B Lower Bound	95,0% Confidence Interval for B Upper Bound	Correlations Zero-order	Correlations Partial	Correlations Part	Collinearity Statistics Tolerance	Collinearity Statistics VIF
1	(Constant)	493.395	154.527		3.193	.019	115.281	871.510					
	ekspor_migas	-2.098	2.158	-.194	-.972	.368	-7.379	3.182	-.649	-.369	-.149	.592	1.691
	ekspor_kelapa_sawit	10.458	4.601	.366	2.273	.063	-.801	21.717	.588	.680	.348	.905	1.105
	ekspor_otomotif	108.105	36.452	.611	2.966	.025	18.909	197.300	.847	.771	.455	.553	1.808

a. Dependent Variable: pertumbuhan_ekonomi

Source: Research Data, 2022

Table 5. F Test Result

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89508.864	3	29836.288	12.192	.006[b]
	Residual	14683.052	6	2447.175		
	Total	104191.916	9			

a. Dependent Variable: pertumbuhan_ekonomi

b. Predictors: (Constant), ekspor_otomotif, ekspor_kelapa_sawit, ekspor_migas

Source: Research Data, 2022

Table 6. Result of Coefficient Determination

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	Change Statistics F Change	Change Statistics df1	Change Statistics df2	Change Statistics Sig. F Change	Durbin-Watson
1	.927[a]	.859	.789	49.46893	.859	12.192	3	6	.006	1.184

a. Predictors: (Constant), ekspor_otomotif, ekspor_kelapa_sawit, ekspor_migas

b. Dependent Variable: pertumbuhan_ekonomi

Source: Research Data, 2022