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The impact of exports and gross domestic product on Indonesian income per capita in the new normal era

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Abstract

Our research has an important objective to analyze and discuss the influence of exports and GDP on Indonesia's per capita income in the new normal era. Hypothesis testing was carried out because of the use of explanatory research methods, emphasizing the relationship between exports, GDP, and income per capita. We use linear regression for processing and reviewing time-series data from 2008 to 2020. Our results suggest that there is a significant positive effect of exports on per capita income. We also find a positive and significant effect of GDP on per capita income and a positive relationship between exports and GDP on Indonesian per capita income.

Keywords: Export, Gross Domestic Product, Income per capita, Indonesia

1. Background

The Covid-19 pandemic is still being the focus of world discussion, especially at the prevention of its out brake. This situation let many nations implement restrictions on social and physical activities. The boredom and irritation began to be felt when the COVID-19 pandemic had entered its second year since the first quarter of 2020, and it was not clear when it would end. There was shocking news for the world's population because a new variant caused the new cases with the world population who died recorded at 4,374,021 people, out of 207.94 million cases indicated positive for the coronavirus (CNN, 2021). Therefore, all countries continue to prevent the transmission of the virus by several limitations human contact, partially or entirely closing entertainment venues, hotels, tours, including shopping centers, traditional markets, and worship places, and implementing strict health protocols for agencies that must comply with the regulations. So, the world is carrying out vaccination activities to prevent the spread of COVID-19.

In 2021, the new variant of malignancy called Delta came from India and peaked around May 2021, becoming a historical record for the world community itself because in this country, thousands of people died and there were still many positive cases. A recent study from *The Center for Global Development* found that deaths from the COVID-19 virus in India were 10 (ten) times the number reported by the Indian government, which was only 415,000 people (CNN, 2021).

Generally, this non-natural disaster changed the order of human life, economy and society. The sector of foreign trade exchange (exports & imports), Gross Domestic Product (GDP) will

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simultaneously affect the per capita income of the population as an indicator of their level of welfare. If this income distribution begins to be disrupted, it is easy for the population to experience social friction, affecting the stability and security of a country. Basu and Das (2011) argue that the per capita income of developing countries is not growing at a faster rate to catch up with the per capita income of developed countries. Further, they found that the initial per capita income positively affects income per capita growth in developed and developing countries. The magnitude of the impact of the initial per capita income on the income per capita growth for developing countries is larger than for developed countries. This implies that initial per capita income leads to more divergence for developing countries within the group, especially in Indonesia.

According to Akram and Rath (2020), many developing countries faced a steady decline of their exports revenue due to the over-dependence on international trade leading to over-exposure of those economies to the rest of the world that eventually led to many unwarranted impacts on economic growth. Some developing countries such as China, India, Brazil and others could undertake trade-related policies to speed up the recovery process to stabilize the exports sector growth and, subsequently, GDP growth (UNCTAD, 2009).

The parameter indicator for measuring economic progress in Indonesia can be seen from its GDP growth, which will become a benchmark for economic growth in a certain period of expenditure and aggregate revenue. Meanwhile, Indonesia, whose population is increasing every year, but the GDP is corrected and even decreased will result in an even distribution of their income, meaning that those who were already poor will be increasingly less prosperous.

Therefore, we would like to investigate several issues. First, the impact of exports on Indonesia's per capita income. Then, we investigate the influence of GDP on Indonesia's income per capita and the simultaneous of exports and GDP on income per capita. We have tested the classic assumption to check whether our data are subject to the problems. The main purpose of this paper was to analyze the relationship between export, GDP, and Income per capita level in Indonesia from 2008 to 2020. Our analysis offers only a partial image of the big picture, because it is well-known that in such cases, many other significant factors may influence the levels of income per capita.

2. Review of related literature

Export

In the discipline of international economics, one of the international policies is export activities. Meanwhile, in macroeconomics, net exports are a component of a country's Gross Domestic Product. Exports are actions regarding government regulations, directly or indirectly and will affect the composition, structure, and direction of transactions for smooth business or business in order to increase a country's foreign exchange (Hady, 2015). So that exports can be defined as the activity of selling products in the form of goods and services from one country to another. Non-oil and gas exports are activities to sell goods or commodities other than oil and gas (Ministry of Trade, 2020).

Gross domestic product

Three approaches in calculating Gross Domestic Product (GDP) are Production Approach, Income Approach, and Expenditure Approach, where description separately but will produce the same number (Badan Pusat Statistik, 2020). Meanwhile, GDP based on expenditure is the magnitude of the output value of the product produced, which can be in the form of goods and services in the domestic area to be used as final consumption by households, *non-profit* institutions, and the government plus investment, as well as exports minus imports (net exports) (Mankiv, 2003).

Income per capita

The per capita income in question is the income of the population or people of a country in a certain period, usually measured in one year. One of the formulas for calculating per capita income is the GDP (gross domestic product) ratio divided by the country's total population in 1 year period. According to Sukirno (2012), a measure of prosperity, then income per capita, describes a piece of information for use in full, showing a high level of prosperity and standard of living achieved by a country. One component of national income that is always calculated is per capita income: the average income population of a country for a certain period of one year. GDP per capita has the formula, namely the GDP of a country divided by the total population in that country. This measure is more specific because it takes into account the population as well as being a reflection of the welfare of the population who live in a country.

3. Methodology

We employ our data from different sources for thirteen years—2008-2020. First, Non-Oil and Gas Exports data was obtained from the Ministry of Trade of the Republic of Indonesia. Then, Indonesia's Gross Domestic Product (GDP) were obtained from Kontan and per capita income data was retrieved from BPS (Indonesia Statistical Bureau) and Ministry of Finance of the Republic of Indonesia. Our research took 4 months from data collecting and processing until the final report of research results from March 2021 to May 2021.

Our dependent variable is income per capita in the form of a comparison between GDP and Indonesia's population. Meanwhile, our independent variables are Non-Oil and Gas Exports and Indonesia's Gross Domestic Product (GDP). We use linear and multi-linear regression analysis techniques to see the relationship between these variables. We aim to provide the effect of exports and GDP on Indonesian per capita revenue in the new normal, which is the situation after the covid-19 pandemic outbreak. Based on the literature, we predicted that there would be a significant correlation between exports and GDP to Indonesia's per capita income. We also run classic assumption tests to check whether our data face assumption problems, such as normality, collinearity, heteroscedasticity, and autocorrelation test.

4. Result and Analysis

Descriptive Analysis

Our study is willing to see the relationship of the export variable on income per capita. Our analysis takes time on the period of 2008 to 2020, which is thought to be due to the corona pandemic. Then, we employ data in the form of a *time series.* Export, GDP, and income per capita will first be changed in the form of the natural logarithm to get more accurate statistical calculation results (Wirasasmita, 2013). Therefore, the *raw data* in this study were converted into natural logarithm form, and then the analysis data processing was carried out carefully.

In table 1, the non-oil and gas exports data still show positive performance in Indonesia. Also, we can see the decline in GDP, especially in 2020, which is in the Covid-19 pandemic outbreak. Similarly, Indonesia's per capita income is supposed to increase year on year, and however, it slowly declines, especially in the pandemic situation.

Table 1. *Raw data for Indonesia's* non-oil exports, GDP and per capita income Year 2008 – 2020

Year	Export (in million Rupiah)	GDP (in million Rupiah)	Income per capita (in thousand Rupiah)
2008	107,894.23	5,586,690.00	21,364.53
2009	94,491.70	5,606,203.40	23,880.88
2010	129,739.50	6,446,851.90	27,028.69
2011	162,019.50	7,287,635.30	30,658.98
2012	153,043.10	7,727,083.40	33,531.35
2013	149.918.80	8,156,497.80	36,508.49
2014	145,961.10	8,564,866.60	41,900.40
2015	131,791.80	8,982,517.10	45,176.20
2016	132,080.90	9,434,613.40	47,960.00
2017	153,084.00	9,912,703.60	47,980.00
2018	162.841.00	10,425,316.30	56,000.00
2019	155.893.80	10,949,243.70	59,100.00
2020	181,304.49	8,013,230.50	56,900.00

Source: (Badan Pusat Statistik, 2020; Ministry of Finance, 2020; Ministry of Trade, 2020)

Regression Result

We run a linear regression to see the impact of our independent variables impact on the dependent. Table 2 shows the result of the regression of Export and GDP on Income per capita and shows that export has a positive effect on income per capita. The higher export in Indonesia led to the higher income per capita. A similar result is shown on GDP, which this variable has a significant relationship with a positive sign on Income pe capita. GDP is increasing every year, thus related to the higher prosperity and standard of living in Indonesia. And the decline of GDP also affects the lower income per capita, as it can be described in 2020, where Covid-19 outbreaks, especially in Indonesia at that time.

Then, we also run multi-linear regression to examine the relationship for both exports and GDP on Income per capita. The empirical result shows that exports and GDP positively affect income per capita. The higher Export and GDP contributes to higher prosperity. But the significant result is only shown in the GDP variable (see table 3). While the traditional export-led growth hypothesis emphasizes more on exports, it does not identify the role of exports in growth convergence across countries. Consistent with Basu and Das (2011), an effective exports sector has a competitive advantage to enhance their capability to produce high quality, improve productive capacity for harmonious economic development, and thus increase income per capita.

Table 2. Regression result for Export and GDP on Income per Capita

Variables	(1)	(2)
Export	1.379***	
	(0.397)	
GDP		1,443***
		(0.174)
Constant	-5.787	-12,390***
	(4.712)	(2,766)
Adj. R-squared	0.479	0.850
No. Obs	13	13

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Referring to the research methodology in our study, we examine whether our study's data have problems with classical assumptions such as normality, multicollinearity, heteroscedasticity, and autocorrelation in table 3. To test the normality, we use One-Sample Kolmogorov-Smirnov Test to see the distribution of residual values. If $p \leq \alpha = 0.05$, the residual value is not normally distributed, whereas if $p \geq \alpha = 0.05$, the residual value is normally distributed (Gujarati, 2007). Our normality test results showed a p-value of 0,200, which means the distribution of residual values is normal. Then we check our multicollinearity using Ramsey test. The result is that our new p 0.991 > 0.880 showing that our data are not facing a multicollinearity problem.

Table 3. Multi-linear regression and specification test

Variables	Income per capita
Export	0.342
	(0.282)
GDP	1.256***
	(0.230)
Constant	-13,466***
	(2.850)
Kolmogorov-Smirnov test	0.200
Ramsey test	0.991
Glejser test	0.081
Runs test	0.575
F	36,642***
Adj. R-squared	0.856
No. Obs	13

Notes: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

We also use the Glejser test and it can be seen that our model is not exposed to heteroscedasticity problems where both models have a value of p = 0,081 higher than 0.05. This shows that our data are not subject to variances from residuals. Then, an autocorrelation test is performed to test whether there is a correlation between the error in the current period (t) and in the previous period (t-1) in our research (Wooldridge, 2012). We also employ Runs test, to check whether there are autocorrelation problems in the model. Our autocorrelation test results show that we do not face autocorrelation problems indicated by p = 0575 (>0.05).

5. Conclusion

In general, as the modern economies are developing to greater extents of modernization and the standard of living is rising. This makes the government tend to increase export and GDP. Our study and discussion found a very strong relationship between export to Indonesia per capita income. The role of exports on oil products in developing countries tends to boost economic performance. A similar result is also shown in GDP, and a higher GDP tends to increase people's prosperity. We also address multi-linear regression to see the simultaneous impact of export and GDP on income per capita and we obtain the consistent result as we predict. However, the significant result is only shown in GDP. We suggest the government increase the ease of bureaucracy in the export sector so that the volume of non-oil exports will increase after the new normal and thus increase GDP per capita. During the Covid-19 pandemic where GDP declined, the government and society had to prevent the spread of the coronavirus

by successful vaccination and to obey the use of health protocols because it will affect the welfare of the Indonesian people.

References

Akram, V. and Rath, B.N. (2020), "Does export diversification lead to income convergence Evidence from cross-country analysis", *Bulletin of Monetary Economics and Banking*, Vol. 23 No. 3, pp. 319–344.

Badan Pusat Statistik. (2020), *Statistik Indonesia 2020*, Badan Pusat Statistik, Jakarta.

Basu, S.R. and Das, M. (2011), *Export Structure and Economic Performance in Developing Countries: Evidence from Nonparametric Methodology*, *Policy Issues in International Trade and Commodities*, New York and Geneva.

CNN. (2021), "Study: Covid cases in India are much higher 10 times".

Gujarati, D.N. (2007), *Fundamentals of Econometrics*, Book 2 Tra., Erlangga, Jakarta.

Hady, H. (2015), *International Economics*, Ghalia, Indonesia.

Mankiv. (2003), *Macroeconomics*, Translatio., Erlangga, Indonesia.

Ministry of Finance. (2020), "Gross Domestic Product".

Ministry of Trade of the Republic of Indonesia. (2020), "Non-Oil and Gas Export Data".

Sukirno, S. (2012), *Development Economics*, Raja Grafindo Persada, Jakarta.

UNCTAD. (2009), *Global Economic Crisis: Implications for Trade and Development*, Geneva, 11-15 May 2009.

Wirasasmita, Y. (2013), *Research Methodology*, FEB UNBOR, Jakarta.

Wooldridge, J.M. (2012), *Introductory Econometrics: A Modern Approach*, 5e ed., Cengage Learning, 5191 Natorp Boulevard Mason, OH 45040 USA, available at:https://doi.org/https://doi.org/10.1016/j.jconhyd.2010.08.009.