



# Competitiveness and Influence of Indonesia's Coal Exports on International Trade: Case Study of 5 Destination Countries

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**Abstract.** This study intends to evaluate the competitiveness of Indonesian coal commodities and to quantify the impact of GDP per capita, population, exchange rate, and price ratio on the volume of coal exported from Indonesia to other nations. Exporting countries (India, the Philippines, Japan, Malaysia, and Thailand). Badan Pusat Statistik (BPS), Bank Indonesia, the World Bank, and Trade Map, an analytical tool designed to assess the competitiveness of Indonesian coal exports in target nations, are the sources of the quantitative secondary data used in this study with a time period of 2017–2021. When estimating the variables that affect the value of coal exports in the destination country, panel data regression is used, specifically the RCA (Revealed Comparative Advantage) approach. The results indicate that Thailand had the highest average comparative advantage in terms of competitiveness during the 2017–2021 period. According to the estimation results, the population, exchange rates, and GDP per capita all have an impact on Indonesia's coal export volume, but the price ratio has no bearing. Because this research has not been previously investigated, the author may examine the competitiveness analysis and the variables influencing Indonesia's coal commodity exports to destination countries in 2017–2021.

**Keywords:** Competitiveness · Export of Coal · Gross Domestic Product · Population · Exchange rate · Price Ratio

## 1 Introduction

International trade is the act of conducting business with another nation that strives to advance domestic needs and well-being. One of them is Indonesia, which has a proactive plan to endure in the age of globalization [1]. Globalization will result in competition and interdependence among nations, one of which is in the form of international trade [2].

A country can specialize in manufacturing goods and services more cheaply both in terms of costs and resources as well as how to produce through specializing, thanks to the various benefits that come with international trade [3]. In order to employ Indonesia's natural resources in international commerce activities where they are used to fulfill the demands of other nations [4].

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Based on [5], India, the Philippines, Japan, Malaysia, and Thailand have been Indonesia's top export destinations for coal over the past five years. The value of Indonesia's coal shipments to the five destinations has varied, as can be seen from the graph above. The country with the highest export value was India. This occurs as a result of India becoming Indonesia's top destination for coal exports from 2017 to 2021. Additionally, coal is Indonesia's top export; with a production percentage of 72.93%, Indonesia's coal exports to destination nations will reach 185.67 million tons in 2022 [6].

The actual coal production between 2017 and 2019 has grown. Production was realized at 461.36 million tons in 2017, with 286.94 million tons going to exports, 97.03 million tons going to DMO, and 141.24 million tons going to domestic consumption. However, in 2019, production was realized at a lower level, which was a result of the Covid-19 phenomenon. The actual coal production will rise once more in 2021, reaching 625.00 million tons, of which 318.75 million tons will be realized for export, 133.04 million tons for DMO, and 222.70 million tons for domestic use.

Because every country has a finite capacity, the state's capacity to meet the requirements of the nation is crucial. Consequently, one option for nations with low production is international trade [7]. The world's energy needs are increasing in tandem with the growth of contemporary industrialization to power the world's economy. Coal, a fossil fuel used to power industrial machinery, is one of them. Coal is also used to make iron and steel, power plants, and cement manufacturing facilities. So that their industries could continue to operate, a number of nations chose to import coal from Indonesia to meet their energy needs [8]. The study [9] explains that the mining industry's main commodity, coal, makes up a sizable portion of Indonesia's GDP. In addition, compared to other mining exports, coal has the largest export value. The value of growing exports can have a significant impact on export diversification since it can influence economic growth in a nation [10].

Around 70% to 80% of Indonesia's total coal production is exported; the remaining 20% is sold on the domestic market [11]. This study addresses the issue of "Competitiveness and Influence of Indonesia's Coal Exports in Destination Countries" based on the description above regarding the value of Indonesia's coal exports in the five destination countries and the outcomes of coal production for the previous five years. This study measures competitiveness by analyzing the effects of coal exports to target countries using the RCA (Revealed Comparative Advantage) approach created by Balassa and panel data regression.

## 2 Theoretical Background and Hypothesis Development

### 2.1 International Trade

A component of the economy or commercial activity that has grown extremely quickly over the past ten years is international trade. Additionally, the term "globalization economy" refers to the growing integration of economies worldwide as a result of international trade [12]. One of the reasons why nations engage in international trade is because it is essential for a nation to grow powerful, prosperous, and prosperous. Trade in goods and services follows when a transaction entails paying for products and services at a later date. International trade, namely the trading of labor for other goods and services,

defines the process. Of course, export and import activity between nations cannot be isolated from international trade. Exports are goods and services produced in a nation and intended for export, whereas imports are goods and services produced overseas and intended for local consumption [13].

## 2.2 Export

According to legal requirements, export is the act of taking commodities out of circulation in a country and sending them overseas with payment made in a foreign currency. Through market expansion, improved selling prices (profit optimization), and the opening of new international markets, often known as open export markets, export tries to increase a company's profit [7]. The majority of the developing nations that are net exporters are also the subject of extensive scholarship on the factors that influence real exchange rates. The primary factor affecting the real exchange rate of developing nations that export goods is the price of those goods [14]. A country will have a trade surplus if its exports are worth more than its imports [15].

## 2.3 Competitiveness

Growth in both the export market share of a country's overall exports to the destination country and the export market share of a specific product to the destination country are indicators of competitiveness [16]. A method for measuring a country's trade performance and comparing its various product and service offerings to determine how competitive they are with one another is known as revealed comparative advantage (RCA). One of the most well-known literary trends blends competitiveness and international commerce theory by Balassa [17]. The RCA index can be used to calculate the relative profits or losses of various commodities and services in various sectors of other countries by using the proportion of export trade as an index to assess comparative advantage. It can also be used to assess the relative performance of exports. The empirical analysis provided by the Balassa index is conceptually complete, according to numerous academics who have studied it as a tool for undertaking critical analysis and making economic judgments. There are a number of empirical distributional flaws in the Balassa index, including time instability and empirical distributional traits [18].

## 2.4 Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is the total revenue brought in by a nation, including revenue from exports of all commodities and services. The worth of all domestically produced products and services is measured using the GDP, which does not take ownership or citizenship into account. This implies that the GDP accounts for the output of all factors of production present in the economy [1]. Since GDP is a gauge of a nation's economy, a high GDP figure can be used to assess a nation's capacity. However, a high GDP does not necessarily mean that its population has a strong economy because a community's economy is controlled by its residents' income [19].

## 2.5 Exchange Rate

The exchange rate significantly affects purchasing decisions when it comes to the cost of a currency in comparison to other currencies. A country can be said to have a big influence on the fundamentals of the global economy if it has a strong exchange rate since investors and market participants need to react to developed countries' central banks' interest rate policies in order to maximize profits (a large number of transactions) [20]. Due to the fact that prices in other nations have different transactional values, the selling price of output in international trade is correlated with the US\$ exchange rate. According to this study [21], the government should implement a currency policy that increases exports while attempting to close the trade balance deficit.

## 2.6 Population

A country's population or population expansion has an impact on a commodity's export through the demand side, which in turn causes a significant increase in local demand. The intriguing aspect is a rise in labor that results in a fall in demand [7]. The fact that Indonesia's population has been growing each year indicates how the country's growing population may impact the community's need for resources. At number four on the globe, Indonesia is one of the nations with the highest population density. This demonstrates that Indonesia needs significant natural resources to meet its population's needs [22].

## 2.7 Price Ratio

A unit of value assigned to a commodity based on information from the producer or owner is known as a price. Indonesia serves as the benchmark for coal prices in Indonesia, as it is one of the top exporters of coal worldwide [8]. The United States Dollar is included as an international payment transaction in this scenario even though other "hard" currencies, including the British Pound sterling, Swiss Francs, and other currencies that have been approved by state agreements, are also eligible. Each nation is certain that the value of its currency will be recognized by other nations as payment for cross-border transactions [23].

## 3 Research Method

The research used secondary data, for example, RCA data gathered by Trade Map and BPS. Data on export volume and price ratio are obtained through the BPS. GDP (Gross Domestic Product) and population are obtained through the World Bank, and the exchange rate is obtained through Bank Indonesia. The RCA (Revealed Comparative Advantage) approach was used to assess the competitiveness of Indonesian coal exports to India, the Philippines, Malaysia, Japan, and Thailand. Competitiveness was calculated using the RCA formula as follows [24].

Panel data regression analysis, which combines time series data with cross-section data consisting of the five destination countries for Indonesia's coal exports within a period of five years starting from 2017–2021, is the analytical tool used to estimate the

variable size of GDP (Gross Domestic Product), population, exchange rate, and the ratio of price to volume of Indonesian coal exports. The econometric model (estimator) of panel data is as follows [25]:

$$EX_{it} = \beta_0 + \beta_1 GDP_{it} + \beta_2 \text{LogPOP}_{it} + \beta_3 EXCH_{it} + \beta_4 PR_{it} + \varepsilon_{it}$$

**Notes:**

- EX : Export Volume to importing countries (tons)
- GDP : GDP per capita of destination country (US\$)
- POP : Country of destination's population (soul)
- EXCH : Destination country exchange rate (US\$)
- PR : Destination country price ratio (US\$)
- $\varepsilon$  : Error term
- i : Cross Section destination country
- $\beta_0$  : Constant
- $\beta_1 \dots \beta_4$  : Coefficient of independent variable regression
- t : Years to 2017–2021

## 4 Result and Discussion

### 4.1 Analysis Results RCA (Revealed Comparative Advantage)

**Descriptive Analysis.** The RCA (Revealed Comparative Advantage) approach can be used to assess a country's comparative advantage. It may be determined whether a nation has a comparative advantage or not by applying the RCA idea. The measurement is presented as an RCA value, which is subject to the following constraints:

High competitiveness if  $RCA > 1$

Low competitiveness if  $RCA < 1$

**Estimation Results.** According to the findings of the RCA method study for the period from 2017 to 2021 in Table 1, Indonesian coal is competitive in each market and has a comparative advantage in five export destination nations. In general, Thailand and Japan have the highest and lowest prices for Indonesian coal, respectively. However, altogether, the five export destinations for coal from Indonesia are highly competitive.

Based [26] on data from 2019, when Indonesian coal exports to Thailand were worth US\$812,563, the RCA value of Indonesian coal in Thailand reached its highest level of 21.81. The RCA for Indonesian coal in India increased at its greatest rate ever in 2019, when it reached 8.67. From 2017 to 2019, India's coal exports increased; however, from 2019 to 2021, the country's coal demand began to fall. This is because Covid-19 emerged, which had an effect on global economic activity, and India enacted a regional quarantine policy, which practically caused a drop in coal imports from Indonesia.

In 2018, the RCA value of Indonesian coal in the Philippines reached 14.04. This occurred as a result of Indonesia's coal exports to the Philippines reaching a value of 1,539,806 US dollars during that time. Between 2017 and 2021, Indonesian coal's competitiveness in Japan witnessed a shifting comparative advantage. The highest RCA

**Table 1.** RCA value of Indonesian coal to five export destination countries in 2017–2021

Years	India	Philippines	Japan	Malaysia	Thailand
2017	7,40	11,76	4,12	12,19	19,34
2018	8,07	14,04	4,22	11,76	21,61
2019	8,67	13,38	4,52	12,64	21,81
2020	7,59	12,72	4,93	13,28	20,16
2021	6,82	11,82	4,36	11,67	18,14
Average	<b>7,71</b>	<b>12,74</b>	<b>4,43</b>	<b>12,30</b>	<b>20,21</b>

Source: Processed results Excel 2019

value, 4.93, was recorded in 2020. Although Indonesian coal's RCA value in Japan is not very high, it has now been classified as a commodity with a comparative advantage. Even if the number of coal imports from Indonesia has increased recently, Japan remains dependent on them.

The RCA value of coal from Indonesia in Malaysia was 13.28 in 2020. At that time, Malaysia received coal shipments from Indonesia for \$1,306,032. Prior to the conclusion of 2019, the value of Indonesia's RCA in Malaysia in 2020 grew. This demonstrates that the two nations' economies are on the right course to recovery following the effects of the Covid-19 pandemic.

## 4.2 Data Panel Analysis Results

**Descriptive Analysis.** The panel data approach was used in this analysis because it combines cross-section data from five Indonesian coal export destinations with time series data for the years 2017 through 2021. Table 2 displays the outcomes of the panel data analysis using the three methods. The Chow test, Hausman test, and Lagrange Multiplier test indicated in Table 2, as well as the model selection test indicates that the Common effect model is the best option for estimating the data in this investigation. Result Models (CEM).

## Estimation Result

### Selection of a Selected Estimation Model

#### *Chow Test*

The estimated Common Effect Model (CEM) or Fixed Effect Model is chosen using the Chow test (FEM). The Common Effect Model (CEM) is the estimated model for the Chow test's  $H_0$ , while the Fixed Effect Model (FEM) is the estimated model for the  $H_a$  (FEM). If the p-value, probability, or empirical statistical significance is  $F >$ ,  $H_0$  is accepted; when these three variables are  $F$ ,  $H_0$  is rejected. As noted in Table 3,  $H_0$  is accepted because the p-value, probability, or empirical significance of the F statistic is 0.4743 ( $>0.10$ ). In conclusion, the Common Effect Model is the estimated model (CEM).

**Table 2.** Analysis result estimation of panel data

Variable	Coefficient		
	CEM	FEM	REM
C	-662874.1	-300545.5	-61641.64
GDP	1.487406	5.134801	1.487406
logPOP	38976.68	17934.52	38976.68
EXCH	-794.5335	-1094.954	-794.5335
PR	-0.812043	0.895094	-0.812043
R <sup>2</sup>	0.932299	0.945003	0.932299
Adj R <sup>2</sup>	0.918759	0.917504	0.918759
F-statistic	68.85410	34.36559	68.85410
Prob F-stat	0.000000	0.000000	0.000000

Source: Processed Results E-Views 9

**Table 3.** Best Model Test Results

Redundant Fixed Effects Tests (Chow test)			
Effects Tests	Statistic	d.f.	Prob.
Cross-section F	0.923977	(4,16)	0.4743
Cross-section Chi-square	5.195555	4	0.2678

R<sup>2</sup> = 0.932299; F-Stat = 68.85410; Sig.F-Stat = 0.000000

Source: Processed Results E-Views 9

*Hausman Test*

The estimated Fixed Effects Model (FEM) or Random Effects Model (REM) is chosen using the Hausman test. The estimated models are the Fixed Effects Model (FEM) and the Random Effects Model (REM), respectively, according to the Hausman test  $H_0$  (FEM). If the p-value, likelihood, or empirical statistical significance 2 is greater than or equal to two,  $H_0$  is accepted; otherwise,  $H_0$  is rejected. As can be seen from Table 4,  $H_0$

**Table 4.** Hausman Test Results

Correlated Random Effects - Hausman Test			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.695908	4	0.4487

R<sup>2</sup> = 0.945003; F-Stat = 34.36559; Sig. F-Stat = 0.000000

Source: Processed Results E-Views 9

**Table 5.** Lagrange Multiplier Test Results

Lagrange Multiplier Tests for Random Effects			
Test Hypothesis	Chi-Sq. Statistic	Time	Both
Breusch-Pagan	0.665830 (0.4145)	0.557187 (0.4554)	1.223017 (0.2688)

Source: Processed Results E-Views 9

is accepted because the p-value, probability, or empirical statistical significance of 2 is 0.4487 (>0.10). The estimated model is the Random Effects Model, to sum up (REM).

*Lagrange Multiplier*

The estimated Random Effects Model (REM) or Common Effects Model (CEM) was chosen using the Lagrange Multiplier test. The Common Effects Model (CEM) is the estimated model for the Lagrange Multiplier test’s  $H_0$ , while the Random Effects Model is the estimated model for the  $H_a$  (REM). If the p-value (p-value), likelihood, or empirical statistical significance of the Breusch-Pagan statistic is greater than or equal to 1,  $H_0$  is accepted; otherwise,  $H_0$  is rejected. The results of the Lagrange Multiplier test are shown in Table 5. As can be seen,  $H_0$  is accepted because the Breusch-Pagan statistic’s p-value, probability, or empirical significance is 0.4145 (> 0.10). In conclusion, the Common Effects Model (CEM) is the estimated model. The Common Effect Model (CEM), which combined the results of the Chow test, Hausman test, and Lagrange multiplier, was determined to be the most accurate model. Full estimation outcomes from the CEM model.

**Goodness of Fit Test**

*Existence Model Test (F Test).* When at least one independent variable influences the dependent variable, the model is present (not all regression coefficients are zero). The F test is the model existence test. Table 2 demonstrates that F has a p-value of 0.0000 (< 0.01), which means that  $H_0$  is not accepted because of its statistical empirical significance. In conclusion, the estimated Common Effects Model (CEM).

*R-Squared Interpretation.* The calculated model’s capacity for forecasting is shown by the coefficient of determination (R2). The value of R2 is 0.932299, as can be seen in Table 2. This suggests that the variables GDP per capita, population, exchange rate, and price ratio can account for 93.22% of the variation in the export volume variable. The model does not account for the remaining 6.78% of the influence, which came from variables or other factors.

**Interpretation Variables.** According to the findings, GDP per capita (GDP) has a considerable and positive impact on the volume of coal shipments to the target nation. The GDP variable’s coefficient is 1.4874. The relationship between the export variable and the GDP variable follows a linear-linear pattern. In other words, if GDP grows by 1 US dollar, the export volume will fall by 1.4874 dollars. On the other hand, if GDP falls by one US dollar, the export volume will rise by 1.4874. The study’s findings are



consistent with previous research [2]. Since Indonesia's coal exports are positively and significantly influenced by its GDP per capita at a level of 5%, an increase in income will promote an increase in coal exports. According to studies that were done [27], the value of exported cocoa beans from Indonesia can change as the global Gross Domestic Product (GDP) rises. So increasing Indonesia's exports can help it gain market share in nations with high global GDP values [1].

The population (POP) has a positive and considerable impact on the export volume of the destination country, with a coefficient of 38976.68, according to the panel data regression results. The volume of coal exports and the POP variable have a logarithmic-linear pattern of relationship. Accordingly, the export volume will increase by 387.76% if the population (POP) grows by 1%. On the other side, the export volume will drop by 387.76% if the population (POP) drops by 1%. The supply and demand sides of a country's population growth have an impact on a commodity's export. This study does not support [9], indicating Indonesia's coal exports are significantly less competitive when considering the population of the country of destination. A large population is viewed as a fundamental resource for development and can improve quality as well as expertise and skills, which will raise national production. Therefore, a rise in population can increase national income [28]. The population can have an impact since the government may decide to import more goods if the population of a country rises [22].

The currency rate has a considerable, unfavorable impact on the volume of the country's exports (exchange rate). The results show that the exchange variable has a coefficient value of -794,553. The export volume variable and the exchange variable have a linear-linear relationship in terms of pattern. In other words, the export volume will decrease by 794,553 if the value of the exchange variable rises by 1 US dollar. This study is consistent with [29], which demonstrates that the exchange has a significant negative impact because falling imports result from exchange rate depreciation, and rising import prices due to the dollar's appreciation against the Rupiah will result in a decline in domestic demand for imports. According to the law of demand, demand will fall if prices rise. When an export item is susceptible to an exchange rate strengthening, such as when the rupiah exchange rate against the dollar strengthens, the cost of export goods will rise [30]. Because the selling price is based on exchange rate conditions, export volume is also subject to Rupiah depreciation. When the Rupiah depreciates, the corporation will benefit more. To prevent the negative effects of other economic factors brought on by the Rupiah's decline versus the US dollar, preserving the stability of the rupiah exchange rate is just as crucial as attaining the export growth target [31].

The price of coal in Indonesia relative to export destination nations (RHH) has no significant impact on the number of exports. According to the findings, the RHH variable's coefficient value is -0.1820. The export volume and the RHH variable have a linear-linear relationship in terms of pattern. This implies that the export volume will fall by 0.1820 US dollars for every 1 US dollar increase in the value of the RHH variable. The panel data regression's outcomes are consistent with the findings [2], indicating that the export price variable has no bearing on the export of the coal commodity. Saying that the wholesale trade price index has a negative impact on exports is possible because if domestically produced items become more expensive, there will be a greater demand for exports, which will raise the prevalence of domestically produced goods and hence lower

exports [8]. Additionally, high pricing might result in a lack of items since customers often substitute closely related but less expensive alternatives [9].

## 5 Conclusion

The average RCA value of the five countries where Indonesia exports coal shows that Thailand has the greatest average RCA value, according to research on the competitiveness of Indonesia's coal exports in destination countries from 2017 to 2021. Strong competitiveness is indicated by an RCA value greater than 1. After Thailand, the Philippines, Malaysia, India, and Japan have the highest RCA values. However, altogether, the five export destinations for coal from Indonesia are highly competitive.

The Common Effect Model (CEM) was selected as the best estimation outcome based on research on the variables influencing Indonesia's coal commodity exports to destination nations in 2017–2021. The CEM-estimated model passes the goodness-of-fit test, proving its validity. This means that the variables GDP per capita, population, exchange rate, and price ratio may all be used to explain the volatility of the export volume variable. The impact validity test (t-test) results reveal that GDP per capita, population (POP), and exchange rate are the independent factors that affect Indonesia's coal exports to destination countries in 2017–2021 (Exchange Rate). The ratio of coal export prices to destination nations, on the other hand, has no appreciable impact on the volume of coal exported by Indonesia between 2017 and 2021. In this study, it is claimed that the price ratio has no bearing on the value of coal exports since, as global prices rise, buyers from other nations will become less interested in importing coal from Indonesia and will switch to other, more cost-effective options.

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## References

1. N. Laili, "Analisis daya saing dan faktor-faktor yang mempengaruhi ekspor produk alas kaki Indonesia ke Amerika Serikat ditinjau dalam perspektif ekonomi Islam," *J. Ilm. Ekon. Islam*, vol. 7, no. 2, pp. 1019–1029, 2021, doi: <https://doi.org/10.29040/jiei.v7i2.2385>.
2. L. T. Carolina and J. Aminata, "Analisis daya saing dan faktor yang mempengaruhi ekspor batu bara," *Diponegoro J. Econ.*, vol. 1, pp. 9–21, 2019, [Online]. Available: <https://ejournal2.undip.ac.id/index.php/dje/article/view/3803>
3. I. K. D. Setiawan and N. D. Setiawina, "Analisis daya saing serta faktor-faktor yang mempengaruhi ekspor bijih nikel di Indonesia," *E-Jurnal Ekon. Pembang. Univ. Udayana*, vol. 8, pp. 877–906, 2019, [Online]. Available: <https://ojs.unud.ac.id/index.php/eep/article/view/43134>

4. I. G. B. Kumbayana and W. Y. Swara, "Pengaruh jumlah produksi, harga ekspor, dan kurs Dollar Amerika Serikat terhadap volume ekspor batu bara Indonesia tahun 1992–2012," *E-Jurnal Ekon. Pembang. Univ. Udayana*, vol. 4, no. 2, pp. 90–95, 2015, [Online]. Available: <https://ojs.unud.ac.id/index.php/eep/article/view/11029>
5. bps.go.id, "Badan Pusat Statistik Indonesia," *bps.go.id*. <https://www.bps.go.id/static/able/2014/09/08/1034/eskpor-batu-bara-menurut-negara-tujuan-utama-201202021.html> (accessed Oct. 09, 2022).
6. modi.esdm.go.id, "Kementerian sumber daya dan mineral," *modi.esdm.go.id*. <https://modi.esdm.go.id/produksi-batubara>
7. D. Apriani, F. Marissa, and M. Subardin, "Revealed comparative advantage in Indonesian coffee commodity in the international Market," 2020, vol. 142, no. Seabc 2019, pp. 114–119. doi: <https://doi.org/10.2991/aebmr.k.200520.020>.
8. T. Anindita and A. A. Syaputra, "Analisis pengaruh kurs USD, harga batubara acuan, dan volume produksi terhadap volume ekspor pada Pt. Bukit Asam (Persero) Tbk.," *J. Manaj. Ind. Dan Logistik*, vol. 1, no. 2, p. 126, 2017, doi: <https://doi.org/10.30988/jmil.v1i2.23>.
9. R. Admi, S. Saleh, and G. Fitrianto, "The analysis of coal competitiveness and the factors affecting Indonesia's coal exports to main destination countries (a case of 8 destination countries)," *J. Dev. Econ.*, vol. 7, no. 1, pp. 15–28, 2022, doi: <https://doi.org/10.20473/jde.v7i1.33183>.
10. K. Wijaya, R. Nurjanah, and C. M. Prodi, "Analisis pengaruh harga, PDB dan nilai tukar terhadap ekspor batu bara Indonesia," *e-Journal Perdagangan. ...*, vol. 6, no. 3, pp. 131–144, 2018, doi: <https://doi.org/10.22437/pim.v6i3.7349>.
11. S. Yulia and I. Chandriyanti, "Analisis daya saing komparatif dan kompetitif ekspor komoditas batu bara tiga negara berkembang (Indonesia, Afrika Selatan dan Kolombia)," *Ecoplan*, vol. 4, no. 2, pp. 99–110, 2021, doi: <https://doi.org/10.20527/ecoplan.v4i2.339>.
12. D. Satriana, "Pengaturan perdagangan jasa dalam hukum ekonomi internasional," *J. Surya Kencana Dua Din. Masal. Huk. dan Keadilan*, vol. 3, no. 1, pp. 97–118, 2017, doi: <https://doi.org/10.32493/skd.v3i1.y2016.114>.
13. L. Wulandari and S. Zuhri, "Pengaruh perdagangan internasional terhadap pertumbuhan ekonomi Indonesia tahun 2007–2017," *J. REP (Riset Ekon. Pembangunan)*, vol. 4, no. 2, pp. 1–189, 2019, doi: <https://doi.org/10.31002/rep.v4i2.781>.
14. S. Boubakri, C. Guillaumin, and A. Silanine, "Non-linear relationship between real commodity price volatility and real effective exchange rate: the case of commodity-exporting countries," *J. Macroecon.*, vol. 60, pp. 212–228, 2019, doi: <https://doi.org/10.1016/j.jmacro.2019.02.004>.
15. L. Marbun, "Pengaruh produksi, kurs dan Gross Domestic Product (Gdp) terhadap ekspor kayu lapis," *Econ. Dev. Anal. J.*, vol. 4, no. 2, pp. 129–136, 2017, doi: <https://doi.org/10.15294/edaj.v4i2.14812>.
16. L. Rio, E. Malau, N. A. Ulya, E. Martin, R. Anjani, and B. Tejo, "Competitiveness and flow of Indonesian paper trade in the global market," *J. Ekon. Pembang.*, vol. 23, no. 1, pp. 1–18, 2022, doi: <https://doi.org/10.23917/jep.v23i1.17648>.
17. B. Balassa, "Trade Liberalisation and 'Revealed Comparative Advantage,'" *Manchester Sch.*, vol. 33, no. 2, pp. 99–123, 1965, [Online]. Available: <https://doi.org/10.1111/j.1467-9957.1965.tb00050.x>
18. E. O. Adigwe, "A comparative analysis of competitive trade in a cluster market of the European Union: the Revealed Comparative Advantage (RCA) Index," *Naše Gospod. Econ.*, vol. 68, no. 1, pp. 14–24, 2022, doi: <https://doi.org/10.2478/ngoe-2022-0002>.
19. G. G. Marsi and D. T. K. Wardani, "The influence of sharia capital market, sharia bonds (Sukuk), and BI Rate on Gross Domestic Products (GDP) in Indonesia," *J. Econ. Res. Soc. Sci.*, vol. 4, no. 2, pp. 149–162, 2020, doi: <https://doi.org/10.18196/jerss.v4i2.10156>.

20. W. N. I. Sari, E. Setyowati, S. M. Putri, and S. R. Faridatussalam, "Analysis of the effect of interest rates, exchange rate inflation and foreign investment (PMA) on economic growth in Indonesia in 1986–2020," in *Proceedings of the International Conference on Economics and Business Studies (ICOEBS 2022)*, 2022, vol. 655, no. Icoebs, pp. 313–320. doi: <https://doi.org/10.2991/aebmr.k.220602.041>.
21. S. M. S. Putri, E. Setyowati, W. N. I. Sari, and S. R. Faridatussalam, "Analysis of the effect of real exchange rate, exports, and imports on Indonesia's trade balance in 1990–2020," in *Proceedings of the International Conference on Economics and Business Studies (ICOEBS 2022)*, 2022, vol. 655, no. Icoebs, pp. 260–266. doi: <https://doi.org/10.2991/aebmr.k.220602.034>.
22. K. A. W. Mahardika and N. N. Yuliarmi, "Pengaruh jumlah penduduk, produksi, PDB dan kurs dollar Amerika Serikat terhadap impor cabai Indonesia," *E-Jurnal EP Unud*, vol. 7, no. 3, pp. 502–530, 2015, [Online]. Available: <https://ojs.unud.ac.id/index.php/eep/article/view/37842>
23. M. Iyul Dwiana Putra and A. J. Karsudjono, "Pengaruh harga batubara dan nilai tukar rupiah terhadap nilai ekspor batubara di Welhunt international Pte.Ltd Jakarta," *J. Ilm. Ekon. Binis*, vol. 8, pp. 133–145, 2022, doi: <https://doi.org/10.35972/jieb.v8i1.686>.
24. T. Mizik, Á. Szerletics, and A. Jámbor, "Agri-food export competitiveness of the asean countries," *Sustain.*, vol. 12, no. 23, pp. 1–16, 2020, doi: <https://doi.org/10.3390/su12239860>.
25. D. N. Gujarati, *Basic Econometrics*. 2004.
26. trademap.org, "Trade Map," *trademap.org*. <https://m.trademap.org/#/main> (accessed Sep. 15, 2022).
27. A. F. Hadi and W. A. Setyo, "Analysis of factors affecting the value of export of Indonesian cocoa beans in 1996–2015," *Ekuilibrum J. Ilm. Bid. Ilmu Ekon.*, vol. 14, no. 1, p. 16, 2019, doi: <https://doi.org/10.24269/ekuilibrum.v14i1.1509>.
28. M. Nasir and D. Sari, "Pengaruh pengeluaran pemerintah, ekspor, infrastruktur jalan dan jumlah penduduk terhadap pendapatan nasional Indonesia," *J. Ekon. dan Kebijak. Publik*, vol. 2, no. November, pp. 93–104, 2015, [Online]. Available: [https://etd.unsyiah.ac.id/index.php?p=show\\_detail&id=9519](https://etd.unsyiah.ac.id/index.php?p=show_detail&id=9519)
29. E. Emilia, A. Bhakti, and C. Mustika, "Analsis determinan yang mempengaruhi perdagangan luar negeri Indonesia terhadap dua negara yang terlibat perang dagang Amerika Serikat VS China," *J. Paradig. Ekon.*, vol. 16, no. 3, pp. 471–486, 2021, doi: <https://doi.org/10.22437/jpe.v16i3.14342>.
30. M. Asliyana and E. Setyowati, "External and internal determinants exports of crude palm oil in Indonesia from 1990–2020," in *Proceedings of the International Conference on Economics and Business Studies (ICOEBS 2022)*, 2022, vol. 655, no. Icoebs, pp. 32–37. doi: <https://doi.org/10.2991/aebmr.k.220602.005>.
31. N. Auliya, R. R., Setyadi, D., & Rini, "The influence of selling prices and exchange rates on barecore export volume.," *JOBS (Journal Bus. Stud.*, vol. 4, no. 1, pp. 7–18, 2019, [Online]. Available: <https://jurnal.polines.ac.id/index.php/jobs/article/view/1484>

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