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Does a Free Trade Agreement's Impact on the Export of Halal Food to OIC Countries Matter? Evidence from Indonesia

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Abstract

Research Originality: The second-largest organisation after the UN, with a population of 24.4% worldwide, makes OIC countries a potential market. This paper contributes to the existing literature on trade within them by focusing on crucial aspects of the trade agreement's impact on the halal food industry.

Research Objectives: This study examines the influence of a free trade agreement (FTA) on Indonesian halal food exports.

Research Methods: Using panel data from 23 countries spanning the period from 2003 to 2019, the paper employs the gravity model to assess the impact of the FTA and other variables on Indonesian halal food exports to OIC countries.

Empirical Results: The findings indicate that Indonesian food exports to OIC countries with FTAs experience a notable 68% increase compared to those without such agreements. The study reveals GDP, population size, trade openness, and exchange rate positively affect food exports to OIC countries. However, trading partners' distance and entry time exhibit a negative correlation.

Implications: This research holds significance for the Indonesian government as it provides valuable insights for considering the acceleration of trade agreement ratification with OIC countries.

Keywords:
export; free trade; gravity model; halal food; preferential tariff

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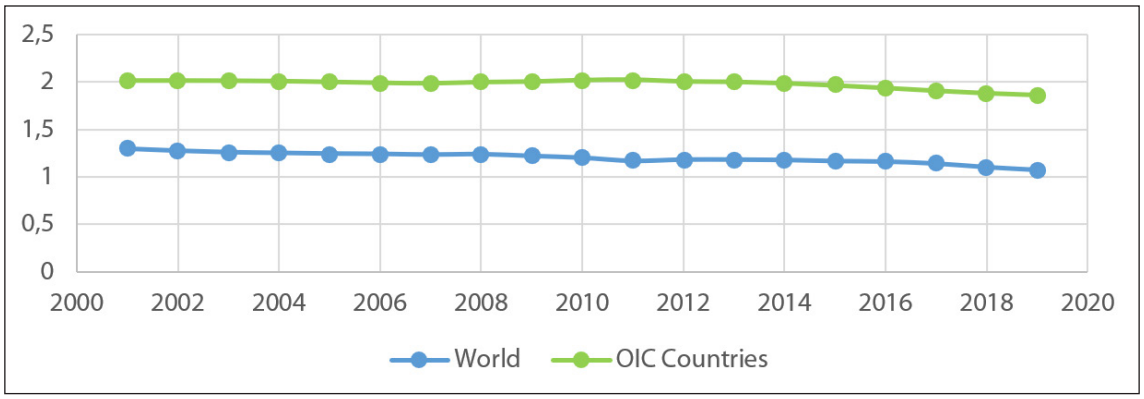
INTRODUCTION

The Organization of Islamic Cooperation (OIC) is the second-largest organization globally, following the United Nations (UN). It comprises 57 member countries, accounting for approximately 24.4% of the world's population (The Organization of Islamic Cooperation, 2021). Figure 1 shows that the population growth in OIC countries significantly outpaces the global average. This fact makes OIC countries an attractive potential export market and a target for trade alliances pursued by numerous countries, including Indonesia.

Figure 1. Population Growth of OIC Countries and The World (%)



Source: Compiled from the World Bank database

Indonesia's exports to OIC countries have shown a consistent upward trend over the years. In the early 2001, exports to OIC countries accounted for 8.97% of the total. While there might have been slight fluctuations in some years, the overall percentage has continued to rise. By 2014, Indonesia's exports to OIC countries had reached 14.05% (see Figure 2). This substantial share highlights the fact that OIC countries represent a significant potential export market for Indonesia.

Figure 2. Indonesia Export Growth to OIC Countries (%)

Source: Compiled from United Nations Database

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Over the past ten years, Indonesia's food and beverage sector has experienced significant investment, making it well-positioned to enhance halal exports to OIC countries. Furthermore, the halal industry has gained global popularity among Muslims and adherents of other beliefs (Badi, 2019). Halal food must adhere to specific requirements, including being free from pork, alcohol, poisons, hazardous materials, or other unhygienic elements when consumed by a Muslim (Bahresy, 1981). Ali (2016) further categorizes food as haram, encompassing carrion, blood, pigs, and non-Allah SWT sanctioned butchering (animal). Several studies on halal food have focused on critical aspects such as certification, awareness, production and quality, halal food in tourism management, and the supply chain (Secinaro & Calandra, 2021). However, more research remains needed on the potential for halal food exports, particularly concerning international trade policies.

The Vice President of Indonesia encourages people to increase exports of Indonesian products, mainly to OIC countries. This strategy aims to establish Indonesia as a global halal center, considering that nine of the ten countries with the largest Muslim population are OIC members. According to the State of the Global Islamic Economy Report 2020/21, OIC countries can potentially strengthen the halal industry and economy through strategic partnerships and free trade arrangements (DinarStandard, 2022).

Indonesia faces the challenge of higher average import tariffs in OIC countries compared to import tariffs worldwide. These high tariffs reduce price competitiveness with domestic products in OIC countries and products from other countries benefiting from preferential tariffs. Implementing a Free Trade Agreement (FTA) to reduce or eliminate import tariffs in OIC countries becomes a viable strategy to address this. This approach aligns with Masruroh (2020), asserting that Indonesian halal foods are competitive in OIC countries due to shared cultural aspects, especially in Islamic-based countries.

FTA is considered well-thought-out and more beneficial in achieving several primary objectives, such as providing trade profits and ensuring market entry (Whalley, 1998). According to the World Trade Organization (WTO), from 1970 to 2021, 501 FTAs were established. Currently, Indonesia has 11 FTAs both bilaterally and regionally. However, its FTA involvement with OIC countries is limited, entwined only with Malaysia and Brunei Darussalam within the ASEAN Trade in Goods Agreement (ATIGA) framework and with Pakistan within the framework of the Indonesia-Pakistan Preferential Trade Agreement (IPPTA).

Mostafa (2020) finds that the fields of study concerning halal certification, halal tourism, and the influence of religiosity are considered significant. Additionally, using the keyword "halal food", much-related research has been conducted on halal supply chains, food quality, marketing, religiosity, and globalization. Regarding the issue of globalization, Halawa (2018) reveals the presence of Muslim immigrants in the US and trade globalization plays an essential role in the acculturation and assimilation of halal food products. However, further discussion is needed to explore the role of globalization

in the halal food trade, particularly in international trade issues such as trade agreements among countries. Urata & Okabe (2007) examine the impact of FTAs on total trade using the gravity model, while Alam (2015) explores the impact of FTAs on Pakistan's export performance. Several FTA variables include the South Asian Free Trade Area (SAFTA), Bilateral-China, Bilateral-Malaysia, Bilateral-Sri Lanka, Bilateral-Mauritius, and Bilateral-Iran. The findings show that all FTAs significantly positively affect Pakistan's export performance, except for Bilateral-Sri Lanka and Bilateral-Mauritius, which have a negative impact.

Zidouemba & Jallab (2021) suggest that the African Continental Free Trade Area (AfCFTA) significantly augments GDP and trade flows. Similarly, Lim et al. (2020) claim that the ASEAN-Korea FTA tends to create trade among countries and improve the economic welfare of ASEAN and Korea. Dianniar (2013) examines the impact of AFTA and ASEAN–China Free Trade Area (ACFTA) using variables of GDP and distance, and the results confirm that AFTA and ACFTA have no impact on the export or import of Indonesian agricultural products. Furthermore, Mareta (2018) argues that the ASEAN-Korea Free Trade Area (AKFTA) negatively affects Indonesian manufactured product exports, with different products being affected differently by the FTA implementation.

Several studies have discussed the impact of free trade agreements, especially in eliminating import tariffs for specific products between Indonesia and its trading partners (Kartini & Margaret, 2020; Kustiari & Hermanto, 2017; Tsutsumi et al., 2019). Some commodities studied include palm oil, fishery products, and textiles, with partner countries including India, the European Union, the Gulf Cooperation Council, and China. In addition to macro-economic indicators such as GDP and exchange rate (Elbadawi & Zaki, 2021; Juliantari & Setiawina, 2015; Kumar et al., 2021; Tien et al., 2015; Wahyudi & Anggita, 2015; Zidouemba & Jallab, 2021), distance (Anh Thu et al., 2015; Kaplan & Bozyigit, 2021), trade openness (Mareta, 2018), population (Naghshpour & Sergi, 2009), and entry time (Putra & Nababan, 2019; Sinaga, 2017), we argue that the level of elasticity of product demand/supply, as well as import substitution, might be the factors that cause different study results. Each country may have a different elasticity of demand/supply and import substitution for a particular product.

Some academics argue that FTAs can open up new export opportunities (Effendi, 2014; Kustiari & Hermanto, 2017; Lembang & Pratomo, 2013; Lim et al., 2020; Tsutsumi et al., 2019; Urata & Okabe, 2007; Zidouemba & Jallab, 2021). However, there is also concern that specific industrial sectors may face competitive pressures and the risk of failure if they cannot compete in global markets (Alam, 2015; Dianniar, 2013; Mareta, 2018). Agriculture and food sovereignty are central issues in Indonesia's FTA debate, and there are concerns that FTAs might harm Indonesia's food security and food sovereignty. These varied results highlight the country's ability to respond to FTAs.

While much research has explored the effects of FTAs on exports, limited research has focused on the impact of FTAs on potential halal food exports. Ali et al. (2020)

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find that FTA utilization might result in higher levels of trade to Malaysia's key halal markets; this study expands to the countries with a majority Muslim population. It addresses the research gap by analyzing the effect of FTAs and other factors on halal food exports, especially to OIC countries. It extends the model to include the issue of trade openness for various OIC countries' trade policies.

The paper contributes to the literature on trade among OIC countries by focusing on the critical aspect of the FTA's impact on halal food. The strategic partnerships among OIC countries could strengthen the halal industry (DinarStandard, 2022). FTA implementation is expected to reinforce Indonesia as a global halal center. The remainder of this paper is organized as follows: after the introduction, which includes discussions of the concepts of halal food, recent research on it, and the impact of FTAs, section 2 describes the methodology used and data sources for this study. Section 3 presents an analytical review and discussion, while section 4 concludes the research and offers policy recommendations.

METHODS

Two approaches commonly used to examine the impact of FTAs are gravity models (Abidin et al., 2013; Ahmed et al., 2021; Alam, 2015; Ali et al., 2020; Anderson & Yotov, 2016; Dianniar, 2013; Didia et al., 2015; Guan & Sheong, 2020; Hayakawa et al., 2016; Herath, 2014; Lopez, 2019; Mahabir et al., 2020; Urata & Okabe, 2007) and computable general equilibrium (CGE) models (Kartini & Margaret, 2020; Kustiari & Hermanto, 2017; Muchopa et al., 2020; Nekhay et al., 2020; Phat & Hanh, 2019; Rosyadi & Widodo, 2018; Tsutsumi et al., 2019). Bekkers & Rojas-Ramagosa (2018) compared these two models and found that they have distinct advantages while showing a certain degree of convergence in the literature. CGE models increasingly use structural estimation as input, while gravity models have become more complex over time, incorporating key features of the CGE.

Gravity models are prevalent for analysing economies, especially related to the flow of goods and services (Mátyás, 1998). They serve as an ex-post analysis approach to assess FTAs using dummy variables that indicate the presence of an FTA. The advantage of gravity models lies in their flexibility to include a variety of variables related to trading and measure their impact on changes in trade volume or value (Plummer et al., 2010).

This study employs panel data from 23 OIC countries and uses purposive sampling techniques for 17 years from 2003 to 2019. The model built in assessing the impact of FTA in the paper refers to gravity models. In the basic gravity model, the variables involved are the exporter's GDP, the importer's GDP, and the distance between the two countries. Many variables were added to the gravity model to obtain the best model in its development. However, this study complements several variables that, in theory, might affect the trade. It includes the population of trading partners, the openness of trading partners, the effective real exchange rate of trading partners, and the number

of days in establishing a company of a trading partner country or termed entry time. Accordingly, the formula in this study is structured as follows:

$$\ln\_EXFB_{ijt} = \beta_0 + \beta_1 \ln\_GDP_{it} + \beta_2 \ln\_GDP_{jt} + \beta_3 \ln\_DIST_{ijt} + \beta_4 \ln\_POP_{jt} + \beta_5 \ln\_TO_{jt} + \beta_6 \ln\_REER_{jt} + \beta_7 \ln\_ET_{jt} + \beta_8 FTA + \varepsilon_{ijt} \quad (1)$$

Note:

$EXFB_{ijt}$: Export halal food from Indonesia to OIC countries (million USD)
GDP_{it} : Gross Domestic Product of Indonesia (billion USD)
GDP_{jt} : Gross Domestic Product of OIC country (billion USD)
$DIST_{ijt}$: Distance between Indonesia and the OIC country (kilometres)
POP_{jt} : Population of the OIC country (thousands)
TO_{jt} : OIC country's trade openness
$REER_{jt}$: OIC country's effective real exchange rates
ET_{jt} : OIC country's entry time
FTA : Dummy variable (FTA=1, non-FTA=0)

The data for all variables in the study were obtained from various sources. Food and beverage export data were gathered from the United Nations. GDP, trade openness, and entry time data were obtained from the World Bank, while data on the distance between Indonesia and OIC countries came from the Centre d'Etudes Prospectives et d'Informations Internationales (CEPII). The real effective exchange rate data was sourced from the Real Exchange Effective Rates Bruegel Working Paper database. Information on FTAs implemented in Indonesia was collected from the Ministry of Finance of the Republic of Indonesia. The research period covered in this study is from 2003 to 2019.

RESULT AND DISCUSSION

Descriptive statistics are presented in Table 1. The average value of Indonesia's exported halal food is USD 211 million, the highest being sent to Malaysia. Its median is far below the mean, indicating that the most significant data is below the average. There are only a few countries with much higher exports than others. There is an indication of a drastic increase in Indonesia's GDP, as seen from the median, which is higher than the average. Variation in GDP's trading partners is high. It also shows that only a few countries have a much higher GDP than others. Malaysia is the closest country to Indonesia, with a distance of 1,053.8 kilometers, while Senegal is the farthest country, with a length of 13,911.5 kilometers. Pakistan has the highest population of 216,565.3 thousand, whereas Brunei Darussalam has the lowest population of 353.3 thousand. OIC countries' trading openness and exchange rate have minor data variations, which means that the difference in data from the average is slight, so the data is more centralized. Variations in entry time data are also minor, even though it shows that most are below the average. FTA has an average value of 0.105. It shows that of 391 data, around 10.5% have an FTA with Indonesia in a given year.

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Table 1. The Descriptive Statistics

Variable	Obs.	Mean	Median	Std. Dev.	Min	Max
$EXFB_{ijt}$	391	211	43	424	319.63	3,380
GDP_{it}	391	704	861	295	235	1,120
GDP_{jt}	391	162	79	205	2.05	958
$DIST_{ijt}$	391	8,772	8,710	3,577	1,054	13,911
POP_{jt}	391	42,430	19,911	53,994	353	216,565
TO_{jt}	391	77.9	71.28	35.5	20.7	210.4
$REER_{jt}$	391	106.5	102.1	15.4	66.2	169.0
ET_{jt}	391	28.0	19.0	26.6	2.5	174
FTA	391	0.105	0	0.307	0	1

Source: Data processing

In panel data regression analysis, three general models are commonly used: the pooled model (PLS), the fixed effect model (FEM), and the random effect model (REM). In the first step, several tests are conducted, including the Breusch-Pagan Lagrange Multiplier Test (to differentiate between pooled and random models), the Chow Test (to differentiate between pooled and fixed models), and the Hausman Test (to differentiate between random and fixed effect models). The results of the three tests are presented in the following table:

Table 2. Panel Model Selection Test

Panel Test	F Stat	Chi Stat	P value	Conclusion
Chow Test	23.93		0.000	Fixed effect is better than Pooled Model
BP LM Test		715.11	0.000	Random effect is better than Pooled Model
Hausman		9.57	0.214	Random effect is better than Fixed Effect

Source: Data processing

Hausman's and BP LM tests verify that the random effect model (REM) is the most appropriate for this study. REM assumes no individual country effects (Diallo et al., 2017). Moreover, REM uses the generalized least square (GLS) approach, which automatically addresses autocorrelation and heteroscedasticity problems (Gujarati & Porter, 2009). The selected model undergoes classical assumption tests before interpreting the results. The tested assumptions include normality assumptions using the Skewness and Geary Test. For the heteroscedasticity test, the Breusch Pagan test is employed, the Multicollinearity test is conducted by examining the Variance Inflation Factor (VIF) value, and the autocorrelation test is performed by analyzing the Durbin Watson value. The results of the four classical assumption tests are shown in Table 3.

The four tests show that two assumptions are not met: heteroscedasticity and autocorrelation symptoms. This condition often occurs in models containing time series data due to the influence of data lag in the dependent variable. To address these problems, we adopt a generalized estimating equations (GEE) regression analysis. GEE parameter

estimates are distribution-free, robust regarding heteroskedasticity, and control for various error structures that can induce bias in panel data (Price & Elu, 2014). GEE is used to analyze panel data by considering the correlation that may exist between observations coming from the same unit within the panel. It is capable of handling data where observations from the same unit are correlated. The following presents a comparison of the regression model estimates for panel data.

Table 3. Classical Assumption Test

Classic Assumptions	Prob.	Conclusion
Normality (Skewness/Geary Test)	0.9833	Normally distributed data
Heteroscedasticity (BP Test)	0.0002	Heteroscedasticity
Multicollinearity (VIF)	VIF < 5	Non-Multicollinearity
Autocorrelation (DW Panel Test)	0.0017	Autocorrelation

Source: Data processing

Based on the results, all regression (pooled, fixed, random, GEE) simultaneous tests are significant, indicating that the model is well-fitted and at least one independent variable affects the dependent variable. We use the GEE to examine the research objective since it consistently produces results with almost all models, particularly the random model. Therefore, it is the most appropriate approach for this study. The test results show that all variables influence Indonesian halal food exports to 23 OIC countries. Meanwhile, the coefficient of determination describes changes in Indonesia's GDP, OIC countries' GDP, distance, population, trade openness, interest rates, entry time, and FTA implementation, accounting for 76.4 percent of the variance in the export of halal food, with the remaining 23.6 percent explained by other factors.

Indonesia's GDP has a significant effect with a coefficient of 0.534, indicating that a 1% increase in Indonesia's GDP will result in a 0.53% increase in Indonesian halal food exports, ceteris paribus. This finding aligns with Dianniar (2013), who posits that Indonesia's GDP positively affects the export of Indonesian agricultural products. Furthermore, this study supports the assertions of Ali et al. (2020) and Kumar et al. (2021) that exporters' GDP positively impacts trade. Given these findings, Indonesia's GDP performance should be a priority for the Indonesian government's development agenda. It is closely tied to the production capacity of goods or services that contribute to the availability of commodities for export (Wahyudi & Anggita, 2015). Increased production of goods leads to higher sales, including exports. GDP is influenced by household consumption, investment, government expenditure, and net exports. Therefore, the government should boost investment in the food and beverage sector to bolster exports. The current challenges for Indonesia are related to the ease of doing business and logistic issues. The ease of doing business is directly linked to the number of companies, investment, and productivity. Hence, Indonesia should allocate government spending effectively to enhance the ease of doing business and develop supporting infrastructure.

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Table 4. Regression Test Results

Variable	Pooled		Fixed		Random		GEE	
	Estimate	Prob	Estimate	Prob	Estimate	Prob	Estimate	Prob
C	0.434	0.447	-17.450	0.000	-5.212	0.076	-4.761	0.081
Ln_GDP_{it}	0.597	0.000	0.079	0.336	0.514	0.000	0.534	0.000
Ln_GDP_{jt}	0.076	0.038	0.827	0.001	0.232	0.029	0.196	0.036
Ln_$DIST_{ijt}$	-1.122	0.000	0.000	n/a	-0.848	0.003	-0.878	0.001
Ln_POP_{jt}	0.878	0.000	1.297	0.001	0.888	0.000	0.899	0.000
Ln_TO_{jt}	0.762	0.000	1.312	0.000	1.181	0.000	1.154	0.000
Ln_$REER_{jt}$	0.745	0.026	0.363	0.166	0.751	0.014	0.766	0.012
Ln_ET_{jt}	-0.507	0.000	-0.428	0.000	-0.457	0.000	-0.457	0.000
FTA	0.446	0.061	0.633	0.024	0.684	0.014	0.680	0.013
R Square	0.7735		0.6017		0.7606		0.7643	
F/Chi	163.05		88.27		679.62		712.06	
Prob.F/Chi	0.0000		0.0000		0.0000		0.0000	

Source: Data processing

One of the fundamental problems related to Indonesia's trade performance is logistics costs. The Minister of National Planning and Development of the Republic of Indonesia conveyed that the high logistics cost in Indonesia significantly impacts reducing competitiveness. It affects investors who are reluctant to come to Indonesia because many other countries are considered to have much cheaper logistics costs. Due to high logistics costs, investors' income is reduced, and many investors move to other countries. Based on World Bank data for 2018, Indonesia's logistics costs are approximately 25% of GDP, higher than Vietnam and Malaysia, whose logistics costs are only around 13%. Logistics costs significantly impact the competitiveness of both entrepreneurs and the country's economy as a whole. Excellent and modern infrastructure is the key to promoting smooth international trade. Improving the connectivity and efficiency of ports, roads, airports, and other transportation networks will help facilitate the flow of goods and services. The Indonesian government needs to facilitate the trade process by simplifying procedures and reducing administrative barriers. Implementing Indonesia's National Single Window (INSW) and a risk management system can help smooth the flow of goods and improve trade efficiency.

The GDP of trading partners significantly and positively affects Indonesian food and beverage exports to 23 OIC countries. This result aligns with previous research conducted by Ali et al. (2020) and Alam (2015), which claim that the GDP of importers or trading partners positively impacts trade. In addition, it supports Kumar et al. (2021) argument that the GDP of trading partners affects exports in the long run. A trading partner's GDP increases the value of products and services produced by a country in a certain period. GDP is formed through four economic components: household consumption, government expenditure, investment, and the difference between the value of exports and imports (net exports). Its increase raises the absorption of consumption and raw materials

obtained through Indonesia's imports and exports. Therefore, the Indonesian government should consider particular countries with high GDPs to penetrate the market further and gain market access. The Indonesian government might organize promotional activities, such as trade shows, particular marketplaces, or e-commerce sites, to introduce halal food products. Indonesian authorities shall facilitate business and trade cooperation. Indonesia needs to actively promote itself as an attractive producer and investment partner for OIC countries. Through economic diplomacy, Indonesia can build strong relationships with them and facilitate easier market access and investment.

Distance is a barrier in trade that influences a negative result. It is a significant component of gravity models that determine transportation costs. The longer the distance, the higher the cost of transportation. The distance variable has a significant effect based on the test results. It negatively affects halal food exports to the 23 OIC member countries. These results are in line with Ali et al. (2020), Kaplan & Bozyigit (2021), and Anh Thu et al. (2015), who argue that distance negatively affects trade, both exports and imports. Therefore, the Indonesian government should pay attention to the costs incurred by the private sector so that the price of Indonesia's products can compete in foreign markets. In international trade, cost obligations between seller and buyer are determined by several commercial terms (Popa, 2012). The most commonly used commercial terms are free on board (FOB), cost, insurance, and freight (CIF).

The logistics costs from the sellers' location to the port are borne by exporters from Indonesia. However, the logistics and shipping costs are the Indonesian importer's obligation when importing raw materials. Indonesia's logistics costs are relatively high compared to other countries, even within the ASEAN region. Based on the World Bank's Logistics Performance Index (LPI), Indonesia was ranked 46th out of 160 countries in 2018. Indonesia's position still needs to catch up to Singapore, ranked 7th, and Thailand, ranked 41st. In the first quarter of 2021, Indonesia's logistics costs reached 23.5% of GDP. This figure is relatively high compared to logistics costs in neighboring countries such as Malaysia, which only reach 13% of GDP. Therefore, the Indonesian government should emphasize the importance of reducing logistics costs for imports and exports to help reduce company expenses.

The population of trading partners positively influences Indonesian food and beverage exports. These results align with research by Ali et al. (2020) and Naghshpour & Sergi (2009), who argue that the population of trading partners positively impacts trade. The population of trading partners indicates market conditions and product demand. The larger the population of the trading partner, the higher the exports from Indonesia. Given that the population growth in OIC countries is much higher than the global average, OIC countries represent a potential export market.

Moreover, as most OIC countries have predominantly Muslim populations, this aligns with Indonesia's strategy to become a center for world halal products, especially considering that nine out of ten countries with the largest Muslim population are members of the OIC. Consequently, exports to high-population countries such as Pakistan, Bangladesh, and Nigeria hold significant potential. Based on these findings, the Indonesian

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government should focus on food and beverage exports to OIC member countries with high populations.

Trade openness also has a positive effect on food and beverage exports. The coefficient value of trade openness is 1.154, the highest among all independent variables. This result means that every 1% increase in trade openness might be followed by a 1.154% increase in Indonesian halal food exports, *ceteris paribus*. This research aligns with the results of Mareta (2018), who claims that trade openness affects manufactured product exports. Additionally, this research supports Usman (2014), who argues that trade openness significantly affects Pakistan's export performance. Trade openness is the percentage of trade between imports and exports to GDP and describes a country's trade policies (Eicher et al., 2012). Santos-Paulino & Thirlwall (2004) found that countries with higher trade openness tend to increase their income, which in turn stimulates imports. The findings recommend that Indonesia prioritize halal food exports to OIC countries with high trade openness, such as Malaysia, the United Arab Emirates, and Jordan. Trade openness refers to a country's economic policies that facilitate and encourage international trade by reducing trade barriers. It aims to create a more accessible and more open trading environment for member countries to trade goods with each other without discrimination. It provides benefits such as increasing consumer choice, reducing production costs, encouraging innovation, and increasing overall economic well-being. Indonesia can strengthen cooperation with OIC countries by increasing trade openness to improve market access and investment.

The effective real exchange rate of trading partners is another variable that influences exports. The result shows that the real exchange rate positively affects food and beverage exports. A higher real effective exchange rate indicates an appreciation of the domestic exchange rate and an increase in demand for goods by the public. This condition triggers an increase in the price of domestic goods, leading people to prefer cheaper imports from other countries. This finding aligns with Wahyudi & Anggita (2015) and Tien et al. (2015), who claim that the real exchange rate effectively affects exports. Kumar et al. (2021) also argue that the exchange rate impacts exports in both the long-run and short-run.

Furthermore, Elbadawi & Zaki (2021) found that a moderate real exchange rate supports a firm's exports. These findings highlight the price sensitivity of food and beverage products. Fluctuations in the practical real exchange rates, which make goods in partner countries more expensive or cheaper, significantly influence food and beverage exports from Indonesia. Therefore, the Indonesian government should strive to stabilize the real exchange rate, especially in uncertain conditions. A weak rupiah would result in more expensive raw materials for the food and beverage industry, impacting the price of goods. Conversely, an excessively strong rupiah might harm exporters due to higher prices of Indonesian goods (Juliantari & Setiawina, 2015).

Entry-time trading partners significantly affect food and beverage exports with negative results. The start-up indicator is one of the critical indicators in ease of doing business (EODB). It is likely to affect other indicators (Sinaga, 2017) significantly. The

ease of establishing a company is closely related to developing investment and increasing the number of companies (Putra & Nababan, 2019). Additionally, an increase in new companies might boost productivity and revenue (Poschke, 2010). This result, in turn, could lead to an increase in raw materials, resulting in higher demand for domestic goods and imports, including exports from Indonesia. Therefore, the Indonesian government should prioritize addressing the issue of entry time in partner countries to optimize exports, particularly in countries with long entry times.

FTA is the primary independent variable analyzed in the study. The results show that FTA positively affects food and beverage exports. With a coefficient value of 0.680, halal food exports to countries with FTA are higher by 68% compared to countries without FTA, ceteris paribus. This research aligns with Abbas et al. (2023), Anggraini et al. (2023), and Urata & Okabe (2007), who argue that FTA promotes trade and increases new trade between countries. To strengthen this finding, Lim et al. (2020) contend that the enactment of the ASEAN-Korea FTA inspires economic integration among countries. The trade facilitation agreement significantly amplifies trade movements from the African Continental FTA (Zidouemba & Jallab, 2021).

The positive influence of FTA on Indonesian food and beverage exports comes from trade creation, which refers to the creation of new import and export trade due to eliminating tariff barriers. By implementing FTA, both countries will reduce or eliminate import tariffs, making the final price of imported goods cheaper and more competitive. This lower price encourages importers to buy from countries with FTA, so exports from Indonesia might increase. This study assumes that all OIC countries have identical or similar elasticity of endowment factors, import substitution, and demand/supply side for halal food commodities.

Furthermore, the analysis using Autoregressive Integrated Moving Average (ARIMA) in the early period of CEPT-AFTA implementation on January 1, 2002, and IPPTA on September 1, 2013, depicts the existence of trade creation by observing the forecasting results as a simulation without FTA and the actual export value after FTA to Malaysia, Brunei, and Pakistan, as shown in Figure 3.

Figures 3 and 4 show that the actual food and beverage exports were higher than the forecast results as a simulation condition without CEPT-AFTA. These confirm that trade was created on January 1, 2002, when CEPT-AFTA was fully implemented in ASEAN countries, including Malaysia and Brunei. Additionally, IPPTA became effective on September 1, 2013. Figure 5 shows that actual food and beverage exports are higher than the forecast results, simulated conditions without IPPTA. These forecasts show that food and beverage exports are responsive to trade liberalization (Usman, 2014). All results show that food and beverage exports to Malaysia, Brunei, and Pakistan are affected by the existence of FTAs, with the emergence of trade creation effects after implementing CEPT-AFTA and IPPTA. Based on the United Nations and World Bank databases, the relationship between the number of FTAs and the portion of food and beverage exports to OIC countries is revealed in Figure 6.

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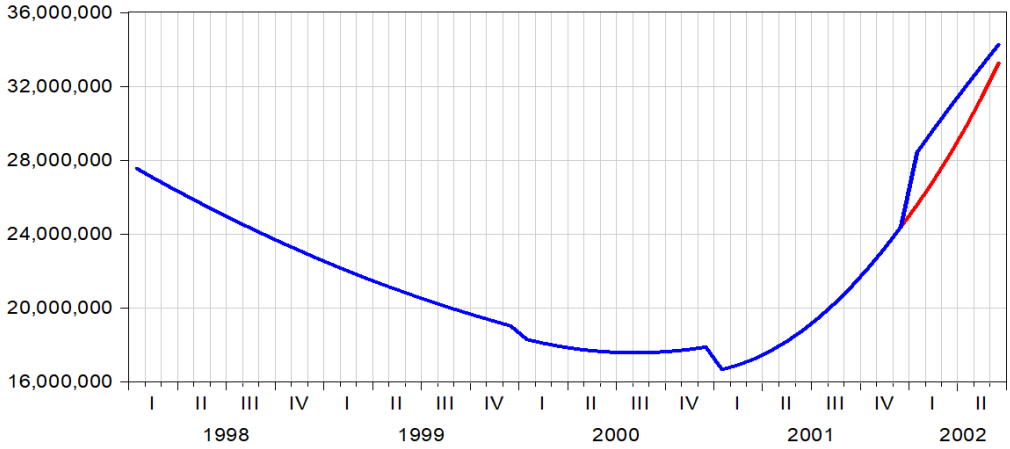
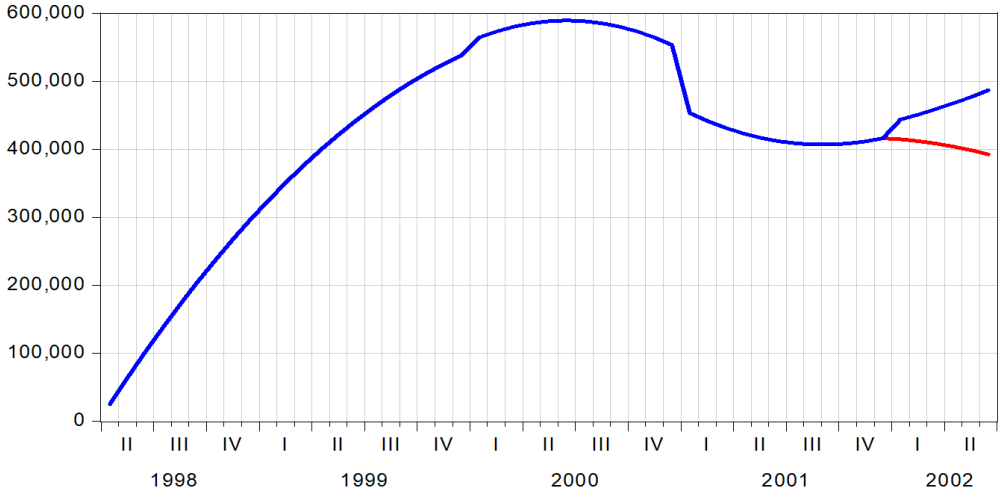
Figure 3. Comparison of Forecasting Value and Actual Value of Food and Beverage Exports to Malaysia (in USD)



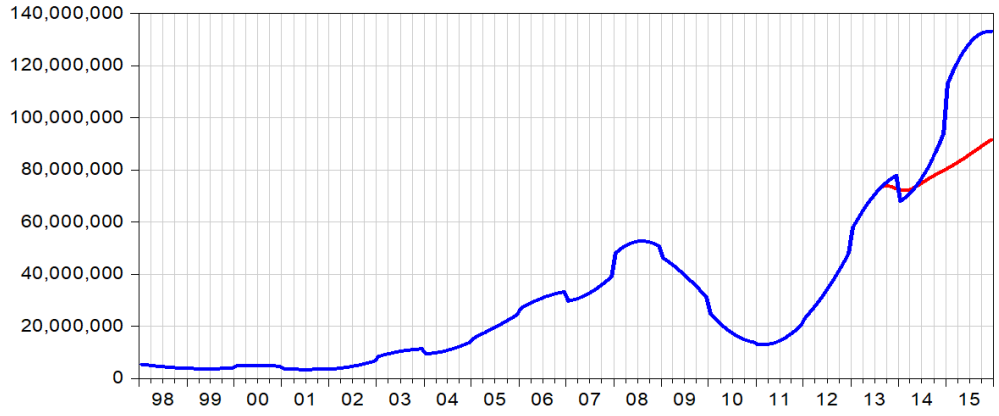
Notes: Blueline (actual value), redline (forecasting value)

Figure 4. Comparison of Forecasting Value and Actual Value of Food and Beverage Exports to Brunei (in USD)



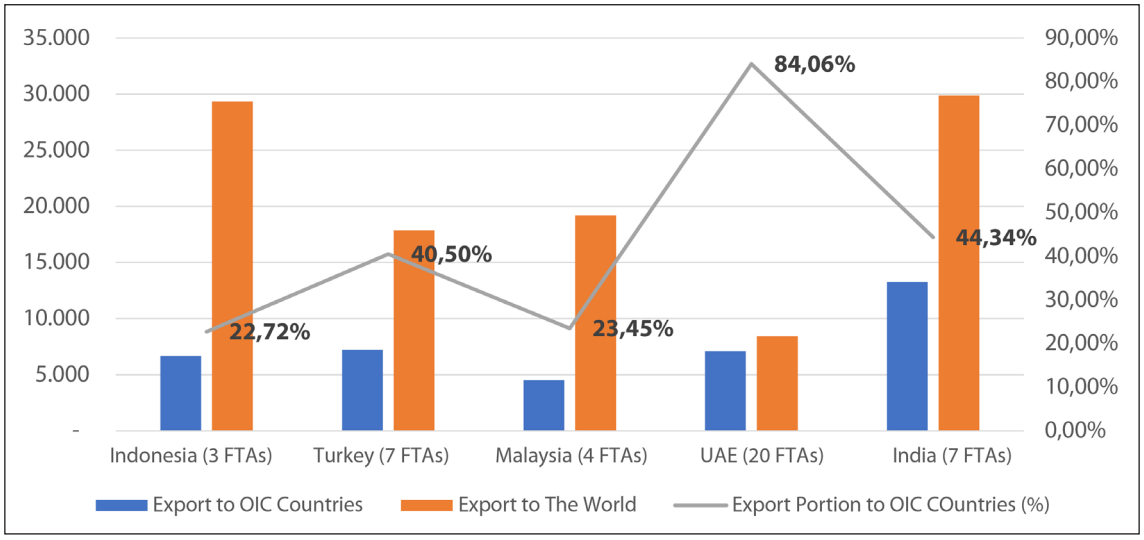
Notes: Blueline (actual value), redline (forecasting value)

Figure 5. Comparison of Forecasting Value and Actual Value of Food and Beverage Exports to Pakistan (in USD)



Notes: Blueline (actual value), redline (forecasting value)

Figure 6. The Export Performance of Food for Some Countries (in Million USD)



Source: Compiled from United Nations database & World Trade Organization

Figure 6 shows that the United Arab Emirates, which has implemented not less than twenty FTAs, tends to have the highest portion of exports to OIC countries. Furthermore, the export performance of India, Turkey, Malaysia, and Indonesia indicates that the number of FTAs is positively correlated with the portion of exports to OIC countries compared to exports to the rest of the world. Countries with more FTAs tend to have better food and beverage export performance to OIC countries than Indonesia, such as the United Arab Emirates, Turkey, Malaysia, and India. In 2019, Indonesia's portion of food and beverage exports to OIC countries reached 22.72% compared to the world, while the share of food and beverage exports by the United Arab Emirates reached 84.06%. Similarly, Turkey, which has more FTAs than Indonesia, has a portion of food and beverage exports to OIC countries of 40.5%. It confirms recent theories that suggest FTAs positively affect the export of food and beverages to OIC countries.

OIC is the second-largest organization after the UN, with a population of 24.4% worldwide. This condition makes OIC countries a target of trade cooperation for many countries, including Indonesia. The growing Muslim population and an increase in GDP in OIC member countries further support the growth in halal food consumption (DinarStandard, 2019). Based on these findings, the Indonesian government needs to accelerate the ratification of Free Trade Agreements with several OIC countries, such as the Protocol on the Preferential Tariff Scheme for TPS-OIC (PRETAS) and Indonesia-Mozambique PTA. Additionally, the government should expedite the process of negotiating Free Trade Agreements like the Indonesia-Bangladesh PTA, Indonesia-Turkey CEPA, and Indonesia-Iran PTA by optimizing tariff reductions on the HS Code of Indonesian food and beverage products.

OIC countries have become growing trading partners for Indonesia (Directorate General of International Trade Negotiations, 2018). With the opening of export markets to OIC countries through PRETAS, Indonesia could potentially increase exports to

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several countries such as Turkey (13.4 million USD), Morocco (37.2 million USD), Pakistan (14.5 million USD), Bangladesh (38 million USD), and Iran (14.1 million USD) (Directorate General of International Trade Negotiations, 2018). Moreover, the Indonesia-Mozambique PTA could increase Indonesian exports with 217 reductions in import tariffs by Mozambique. Indonesia would benefit from the Indonesia-Mozambique PTA, as it would be the entry point for Indonesian products in Africa and provide an alternative raw material supplier. Indonesian products are expected to be recognized in Mozambique and other regional countries. New FTAs should be negotiated with other African countries. Another advantage is that most imports from Mozambique are raw materials such as cotton, nuts, and fruits. Importing raw materials provides an alternative for domestic businesses rather than relying solely on suppliers like China or other countries.

CONCLUSION

The results show that FTA affects Indonesian halal food exports to 23 OIC countries. Indonesia's GDP and the GDP of trading partners positively influence Indonesian halal food exports to 23 OIC countries. The population, trade openness, and exchange rate positively affect food and beverage exports to the 23 OIC countries. In contrast, trading partners' distance and entry time have a negative effect. Food and beverage exports to trading partner countries with a Free Trade Agreement with Indonesia are 68% higher than those without it. The Indonesian government should accelerate the ratification of FTAs with OIC countries by optimizing the reduction of import tariffs on food and beverages. As an initial commitment, Indonesia can start communicating with OIC countries included in the Developing-8 members, as they are predicted to have promising prospects in the future.

The government of the Republic of Indonesia should formulate a policy strategy regarding logistics costs. Indonesia's logistics costs are relatively high compared to other countries, particularly within the ASEAN. The development of infrastructure connectivity in Indonesia is a top priority. Indonesia must carry out comprehensive and data-driven infrastructure planning to ensure the efficient allocation of resources. An integrated transportation system is the key to increasing connectivity across the region. Improving the governance of the logistics sector also requires synergy between related stakeholders such as government agencies and State-Owned Enterprises (BUMN) involved in logistics, private sectors, logistics associations, international institutions, and educational and research institutes.

Additionally, Indonesia shall establish cooperation with OIC countries with higher trade openness, considering its impact on halal food export is the most significant. Before cooperating with them, Indonesia must conduct a feasibility study and market analysis to understand the opportunities and challenges and know the market needs of potential trading partners. Lastly, to become a global halal center, the Indonesian government could increase the export of its halal food worldwide by creating innovative promotion

efforts to OIC countries through trade expos and digital platforms. Through economic diplomacy, Indonesia must actively promote itself as an attractive halal food producer for OIC countries. Future research should use metric data as a proxy for FTA or apply a computable general equilibrium model to comprehensively measure the impact of preferential tariff agreements.

REFERENCES

Abbas, S., Shtun, V., Sapogova, V. & Gleb, V. (2023). Russian Global Export Flow and Potential: Evidence from Augmented Gravity Model. *International Journal of Emerging Markets*, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/IJOEM-02-2022-0285.

Abidin, I. S. Z., Bakar, N. A., & Sahlan, R. (2013). The Determinants of Exports between Malaysia and the OIC Member Countries: A Gravity Model Approach. *Procedia Economics and Finance*, *5*(13), 12–19. https://doi.org/10.1016/s2212-5671(13)00004-x.

Ahmed, A., Hong, Q. J., & Tahir, H. (2021). Effect of Trade Liberalization on Asymmetric Countries for Homogenous and Differentiate Product: Case of Pakistan-China Free Trade Agreement. *Journal of International Logistics and Trade*, *19*(1), 33–48.

Alam, S. (2015). The Effect of Preferential Trade Agreements on Pakistan's Export Performance. *CREDIT Research Paper*, *15*, 1–31.

Ali, M.Y., Abdul Ghaffar, P.Z.A., Kabir, S. and Munir, S. (2020). Halal food export and Malaysia's potential: the applicability of the gravity theory of trade. *Journal of Islamic Marketing*, *13*(2), 309-328. https://doi.org/10.1108/JIMA-01-2020-0019

Ali, M. (2016). Konsep Makanan Halal dalam Tinjauan Syariah dan Tanggung Jawab Produk Atas Produsen Industri Halal. *AHKAM : Jurnal Ilmu Syariah*, *16*(2), 291–306.

Anderson, J., & Yotov, Y. (2016). Terms of Trade and Global Efficiency Effects of Free Trade Agreements, 1990–2002. *Journal of International Economics*, *99*, 279–298.

Anggraini, U., Muchtar, M., & Sihombing, P. R. (2023). Pengaruh Perjanjian Perdagangan Internasional Terhadap Kinerja Perdagangan Indonesia. *Buletin Ilmiah Litbang Perdagangan*, *17*(1), 1-18. https://doi.org/10.55981/bilp.2023.8.

Anh Thu, N., Van Trung, V., & Thanh Xuan, L. T. (2015). Assessing the Impact of ASEAN+3 Free Trade Agreements on ASEAN's Trade Flows: A Gravity Model Approach. *Mediterranean Journal of Social Sciences*, *6*(6), 394–401.

Badi, A. S. (2019). Halal Industry Influence on State GDP - OIC Countires in The Asian Region in 2013 - 2016. *Airlangga International Journal of Islamic Economics and Finance*, *1*(1), 37–53. https://doi.org/https://doi.org/10.20473/aijief.v2i1.15472.

Bahresy, H. (1981). *Guidelines for Islamic Jurisprudence.* Surabaya: Al-Ikhlas.

Bekkers, E., & Rojas-Ramagosa, H. (2018). The Welfare Effects of FTAs in Quantitative Trade Models: A Comparison of Studies about TTIP. *The World Economy Wiley Blackwell*, *42*(1), 87–121. https://doi.org/https://doi.org/10.1111/twec.12670

https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v23i1.32951

Diallo, A., Yin, Z.H., Togo, J.M. and Koivogui, S.K. (2017). Panel Data Analysis of African's Trade: The Gravity Model Approach. *Developing Country Studies*, *7*(7), 73-85.

Dianniar, U. (2013). The Impact of Free Trade Agreements on Indonesia's Agricultural Trade Flows: An Application of the Gravity Model Approach. *(Unpublished Thesis).* International Institute of Social Studies.

Didia, D., Nica, M., & Yu, G. (2015). The Gravity Model, African Growth and Opportunity Act (AGOA) and US Trade Relations with Sub-Saharan Africa. *Journal of International Trade and Economic Development*, *24*(8), 1130–1151.

DinarStandard. (2019). *State of the Global Islamic Economy Report 2019/20: Driving The Islamic Economy Revolution 4.0*. Dubai: DinarStandard

DinarStandard. (2022). *State of the Global Islamic Economy Report 2022: Unlocking Opportunity*. Dubai: DinarStandard

Effendi, Y. (2014). Asean Free Trade Agreement Implementation for Indonesian Trading Performance: A Gravity Model Approach. *Buletin Ilmiah Litbang Perdagangan*, *8*(1), 73–92. https://doi.org/10.30908/bilp.v8i1.87.

Eicher, T. S., Henn, C., & Papageorgiou, C. (2012). Trade Creation and Diversion Revisited: Accounting for Model Uncertainty and Natural Trading Partner Effects. *Journal of Applied Econometrics*, *27*(2), 296–321. https://doi.org/10.1002/jae.1198.

Elbadawi, I., & Zaki, C. (2021). Exchange Rate Undervaluation, Economic Institutions and Exports Performance: Evidence from Firm-Level Data. *International Journal of Trade and Global Markets*, *14*(1), 62–93. https://doi.org/10.1504/IJTGM.2021.113348.

Guan, Z. & Ip Ping Sheong, J.K.F. (2020). Determinants of Bilateral Trade between China and Africa: A Gravity Model Approach. *Journal of Economic Studies*, *47*(5), 1015-1038.

Gujarati, D. N., & Porter, D. C. (2009). *Basic Econometrics*. New York: McGraw-Hill Irwin,

Halawa, A. (2018). Acculturation of Halal Food to the American Food Culture Through Immigration and Globalisation: A Literature Review. *Journal of Ethnic and Cultural Studies*, *5*(2), 53–63.

Hayakawa, K., Ito, T., & Kimura, F. (2016). Trade Creation Effects of Regional Trade Agreements: Tariff Reduction Versus Non-Tariff Barrier Removal. *Review of Development Economics*, *20*(1), 317–326.

Herath, H. M. S. P. (2014). Impact of ASEAN Free Trade Agreement (AFTA) on Agrifood Trade Creation and Trade Diversion. *IJAR-BAE*, *3*(1), 32–42.

Juliantari, D., & Setiawina, N. (2015). Analysis of the Impact of the Exchange Rate, Inflation and Foreign Investment on the Value of Food and Beverage Exports in Indonesia. *E-Jurnal Ekonomi Pembangunan Universitas Udayana*, *4*(12), 1507–1529.

Kaplan, Z., & Bozyigit, S. (2021). The Effect of Turkey's Logistics Performance on Turkey's Foreign Trade. *International Journal of Trade and Global Markets*, *14*(1), 48–61.

Kartini, K., & Margaret, S. (2020). Dampak Kebijakan Tarif terhadap Sektor Pertanian di Indonesia: Analisis Model Global Trade Analysis Project (GTAP). *Jurnal Ekonomi Indonesia*, *10*(1), 25–41. https://doi.org/10.52813/jei.v10i1.64

Kumar, T. K. D., Poornima, B. G., & Sudarsan, P. K. (2021). Exchange Rate and Its Impact on India's Trade with Its Major trading partners: a pooled mean group approach. *International Journal of Trade and Global Markets*, *14*(3), 292-303.

Kustiari, R., & Hermanto, H. (2017). The Impacts of The Indonesia-India Free Trade Agreements on Agricultural Sector of Indonesia: a CGE Analysis. *Jurnal Agro Ekonomi*, *35*(13), 33–48. https://doi.org/http://dx.doi.org/10.21082/jae.v35n1.2017.33-48.

Lembang, M. B., & Pratomo, Y. (2013). Ekspor Karet Indonesia ke-15 Negara Tujuan Utama Setelah Pemberlakuan Kebijakan ACFTA. *Trikonomika*, *12*(1), 20–31.

Lim, S.-J., Park, J.-Y., Nam, H.-J., & Park, S.-H. (2020). The Moderating Role of ASEAN-Korea FTA on the Relationship between Trade and South Korean Outward FDI. *International Journal of Trade and Global Markets*, *13*(3), 348-365.

Lopez, D. (2019). China's Trade Policy Towards Latin America: An Analysis of Free Trade Agreements Policy. *Asian Education and Development*, *10*(3), 399–409.

Mahabir, A., Fan, J., & Mullings, R. (2020). Does the African Growth and Opportunity Act (AGOA) impact EU-15 imports from Africa?. *Journal of Economic Studies*, *47*(5), 1155–1180. https://doi.org/10.1108/JES-11-2018-0413

Mareta, B. M. T. (2018). The Impact of ASEAN-Korea Free Trade Agreements on Indonesian Export of Manufacturing Goods. *Etikonomi*, *17*(2), 161–184.

Masruroh, N. (2020). Study of Halal Food Export Policy in Indonesia. *Proceedings of the 19th Annual International Conference on Islamic Studies*.

Mátyás, L. (1998). The Gravity Model: Some Econometric Considerations. *World Economy*, *21*(3), 397–401. https://doi.org/10.1111/1467-9701.00136.

Mostafa, M. M. (2020). A Knowledge Domain Visualisation Review of Thirty Years of Halal Food Research: Themes, Trends and Knowledge Structure. *Trends in Food Science and Technology*, *99*, 660–677. https://doi.org/10.1016/j.tifs.2020.03.022.

Muchopa, C. L., Bahta, Y. T., & Ogundeji, A. A. (2020). Trade and Welfare Impacts of the Frozen Orange Juice Tariff Rate Quota of South Africa. *International Trade Journal*, *34*(2), 222–246. https://doi.org/10.1080/08853908.2020.1715311

Naghshpour, S., & Sergi, B. S. (2009). World Trade Indicators and a New Approach to Measure Globalisation and Countries' Openness. *International Journal of Trade and Global Markets*, *2*(1), 1-24. https://doi.org/10.1504/ijtgm.2009.023030.

Nekhay, O., Delgado, M. C., & Cardenete, M. A. (2020). Does Abolishing Tariffs in Bilateral Trade Matter for a Country's Economic Growth? The Impact of the EU–Ukraine DCFTA. *Europe - Asia Studies*, *73*(7), 1257–1278.

Phat, L. T. N., & Hanh, N. K. (2019). Impact of Removing Industrial Tariffs Under the

https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v23i1.32951

European–Vietnam Free Trade Agreement. *Journal of Economics and Development*, *21*(1), 2–17. https://doi.org/10.1108/jed-06-2019-0011.

Plummer, M. G., Cheong, D., & Hamanaka, S. (2010). *Methodology for Impact Assessment of Free Trade Agreements*. Philippines: Asian Development Bank.

Popa, L. P. (2012). Development of the International Trade in Terms of Incoterms 2010 Rules. *Economics and Applied Informatics, 1,* 99-106.

Poschke, M. (2010). The Regulation of Entry and Aggregate Productivity. *The Economic Journal*, *120*(549), 1175–1200.

Price, G. N., & Elu, J. U. (2014). Does Regional Currency Integration Ameliorate Global Macroeconomic Shocks in Sub-Saharan Africa? The Case of the 2008-2009 Global Financial Crisis. *Journal of Economic Studies, 41*(5), 737–750.

Putra, B. P., & Nababan, A. M. (2019). Optimalisasi Investasi untuk Negara Anggota APEC (Kajian Ekonomi & Tantangan DPMPTSP-DKI Jakarta). *MONAS: Jurnal Inovasi Aparatur*, *1*(2), 73–83.

Rosyadi, S. A., & Widodo, T. (2018). Impact of Donald Trump's Tariff Increase Against Chinese Imports on Global Economy: Global Trade Analysis Project (GTAP) Model. *Journal of Chinese Economic and Business Studies*, *16*(2),125–145.

Santos-Paulino, A., & Thirlwall, A. P. (2004). The Impact of Trade Liberalisation on Exports, Imports and the Balance of Payments of Developing Countries. *Economic Journal*, *114*(493), 50-72. https://doi.org/10.1111/j.0013-0133.2004.00187.x.

Secinaro, S., & Calandra, D. (2021). Halal Food: Structured Literature Review and Research Agenda. *British Food Journal*, *123*(1), 225–243.

Sinaga, E. J. (2017). Upaya Pemerintah dalam Merealisasikan Kemudahan Berusaha di Indonesia. *Jurnal Rechts Vinding*, *6*(1), 329–348.

Tien, N., Nho, V., & Hung, Q. (2015). Analysing the Determinants of Services Trade Flow between Vietnam and European Union: Gravity Model Approach. *MPRA Paper*, *63982*.

Tsutsumi, M., Ambashi, M., & Okubo, A. (2019). FTA Strategies to Strengthen Indonesian Exports : Using the Computable General Equilibrium Model. *ERIA Discussion Paper Series*, *1*(302), 27.

Urata, S. R., & Okabe, M. (2007). The Impacts of Free Trade Agreements on Trade Flows: An Application of the Gravity Model Approach. *RIETI Discussion Paper*, *07-E-052*.

Usman, A. (2014). Impact of Trade Openness on Export Performance: Case Study of Pakistan. *(Unpublished Thesis).* KDI School of Public Policy and Management.

Wahyudi, S. T., & Anggita, R. S. (2015). The Gravity Model of Indonesian Bilateral Trade. *International Journal of Social and Local Economic Governance*, *1*(2), 153–156.

Whalley, J. (1998). Why Do Countries Seek Regional Trade Agreements?. In. Frankel, J. A., (Ed). *The Regionalization of the World Economy.* Chicago: University of Chicago Press.

Zidouemba, P. R., & Jallab, M. S. (2021). The African Continental Free Trade Area and the Trade Facilitation Agreement: Some Regional Macroeconomic Impacts. *International Journal of Trade and Global Markets*, *14*(3), 325-337.

https://journal.uinjkt.ac.id/index.php/etikonomi
DOI: https://doi.org/10.15408/etk.v23i1.32951