BILATERAL TRADE FLOWS AMONG G7 MEMBER COUNTRIES AND INDONESIA: GRAVITY MODEL APPROACH

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ABSTRACT

Purpose : This study aims to analyze the determining factors that determine the bilateral trade flow among G7 member countries and Indonesia.

Design/Methodology/Approach : This study uses the gravity model of trade as conceived by Timbergen (1962). Panel Regression Analysis with Fixed Effect Method is conducted to acknowledge the relationship between Gross Domestic Product (GDP), PerCapita Gross Domestic Product (PCGDP), Exchange Rate (ER), Population (POP), and Distance (DIST) on G7’s Bilateral Trade Flows (BTF) while the data used are both time series (2007-2016) and cross-sectional. This study used secondary data obtained from the World Bank, CEPII, UN Comtrade, OECD, and ITC Trade Map.

Findings : The results of this study simultaneously and partially proved that the independent variables as mentioned above definitely have an impact on G7’s Bilateral Trade Flows, thus specifically the results show PerCapita Gross Domestic Product (PCGDP), Population (POP), and Distance (DIST) had a significant influence on G7’s Bilateral Trade Flows.

Keywords : G7 Bilateral Trade Flows, Panel Regression Analysis, Gravity Model

JEL Classification : F14, F53, C33

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INTRODUCTION

Multilateralism, or cooperation between several countries has long been underway since ancient times and is still in practice nowadays. Countries’ awareness of the importance of the relationship in trade, economy, investment, and security will encourage them to build an alliance for both individuals as well as shared sake. Khan (2013) explained that to reach sustainable development and to reduce poverty, which are the main goals of almost every developing country, International Trade is one of the solutions that can be taken. To achieve gains from trade, International trade revolves around the countries’ export and
import, providing income that will help the country to grow and develop. Salvatore (2013) said trade negotiations can reduce the obstacles in bilateral trade between countries and will increase the value of high-tech exports. Furthermore, Saimul (2013) explained that export is important for a country because export is an engine for growth.

Indonesia is a developing country that has prosperity based on population count and wealthy natural resources, of course being one of the trading spotlights of the world. With natural wealth expanding from Sabang to Merelake and supported by more than 260 million inhabitants (BPS, 2016. The richness of natural resources in Indonesia can be viewed from the value of Indonesia's exports (2003-2013) rose an average of 10% per year. Furthermore, export in 2003 reached 6.10 million dollars then soared to 16.98 million dollars in 2013, accounted for 25% of the country’s revenue (The World Bank Data, 2014).

On the other hand, The Group of Seven (G7) is a powerful form of cooperation that is designed to facilitate trade, economy, investment, security, global development, environmental issues, etc. Offered from the IMF, The Group of Seven (G7) has more than 64% of global net wealth ($263 trillion) and all its members have a very high human development index. The G7 countries also represent 46% of the global GDP being evaluated by the exchange rate market and 32% of global purchasing power parity. G7 is a group of countries that take a huge role in the world’s economics, including Indonesia (The World Bank Data, 2014).

Indonesia however, is a significant mining and agricultural product exporter. Indonesia had the highest share of value-added exports in the country (just under 90%) between BRICS and G7 economies in 2011 although Indonesia exports contents (29.0%) were the lowest among the G7 economies and BRICS (OECD, 2015).

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Table 1

The elasticity of Indonesia with the G7 Member countries

| Country Partner | The year 2007-2008 | The year 2015-2016 |
|-----------------|--------------------|--------------------|
| Canada          | 1.04%              | 3.37%              |
| German          | 0.66%              | 1.63%              |
| France          | 0.61%              | 3.82%              |
| English         | 9.58%              | 2.77%              |
| Japanese        | 5.72%              | 5.70%              |
| Italy           | 5.49%              | 5.02%              |
| United States   | 20.62%             | 3.10%              |

Source: ITC Trade Binder, Data Processed

To determine the effect of changes in the national income of the G7 countries on changes in Indonesia's national income, elasticity is used. Indonesia has good elasticity with the G7 member countries. As for the results above, the elasticity of each country are counted with the elasticity of demand using variable GDP as samples from each of these countries, thus it can be concluded that there is a relationship which can be translated to, changes in the GDP of G7 is followed by changes in the GDP of Indonesia. As shown in Table 1 above, a 1% change in Canada's national income in 2007-2008 for example, has increased Indonesia's national income by 1.04%. This figure increased to 3.37% in 2015-2016.

The Gravity model has been applied to a variety of goods and factors of production that move across regional and national boundaries in different situations since the 1940s (Oguledo and Macphee, 1994). This model was inspired by the "law of gravity" created by Sir Isaac Newton. In 1962, economist Jan Tinbergen, Netherlands which first won the Nobel Prize in economics, first introduced the gravity model. Tinbergen believed that trade flows between the two countries are determined by the scale of the economy and the distance between the two countries. Trade flow should be associated positively with the economy, which can be measured by GDP or GDP per capita. On the contrary, trade flow should be associated negatively with the distance between the two countries.

Several studies on bilateral trade using the gravity model include Krueger (1999), Mauro (2001), Martinez-Zarzoso et al. (2001), Rahman (2003), Pravorne et al (2003), Christine (2005), Yuniarti (2007), Syahnaz (2007), Ekanayake et al., (2010), Abidin et al., (2013), Wee Chian Koh (2013), Khan et al. (2013), Kaitjily and Yusran (2014), Wahyudi and Anggita (2015), Pratama (2017). These studies give almost the same result, namely that bilateral trade is influenced by the national income of each trading partner country and the distance of the two trading partners.

This study used the gravity model approach to acknowledge and analyze the influence and the determining factors of the current bilateral trade relations of the G7 member countries and Indonesia. By using a regression panel, this study used a common gravity model with variable GDP, GDP Per capita, exchange rates, populations, and distances as
the calculation benchmark for Bilateral trade flows among G7 member countries and Indonesia.

The origin of the gravity model is the theory of Newtonian physics, invented by Sir Isaac Newton in 1978 called the "Law of Universal Gravitation" mechanics, this law states that two objects of mutual attraction to each other proportionally with the respective body mass (in kilograms) divided by the square of the distance between the center of gravity of the object (in meters).

In the context of trade, this model states that the intensity of trade between countries will be positively related to the national income of each country, and inversely related to the distance between the two countries, Feenstra et al., (1998) said that the gravity model can explain the flow of international trade in a form of bilateral trade flow which is a log-linear function of income and distance. According to Alonso (1987) in Fitzsimons and Hogan (1999), a strong relationship was found by using the gravity function by replacing mass with population and gravitational force with several measures of interaction between two locations.

The gravity Model created by Sir Isaac Newton was first applied and in economics by an economist from the Netherlands Jan Tinbergen in 1962, which was also later, applied by Poyhonen in 1963 followed by Linemann in 1966, the model was formulated as follows:

\[ M_{ij} = \frac{K Y_i Y_j}{D_{ij}} \]

Where:

\[ M_{ij} \]: Current Import country i to country j

\[ Y_i \]: the GDP of the country i

\[ Y_j \]: GDP j

\[ D_{ij} \]: geographical distance between the two countries i and j.

The Gravity Model has been widely used in researches, especially researches themed in international trade. Some studies explain that gravity models can be obtained through the foundation of several economic theories about international trade that have been generally used, even those theories are in principle very different from one another. One of them is proven by Evenett and Keller (2002), who proved that the Heckscher-Ohlin theory can explain the success of gravity models empirically.
### Table 2
Literature Review from Previous Researchers Using Gravity Models

| No | Author                          | Title                                                                 | Year | Foundings                                                                                                                                 |
|----|---------------------------------|-----------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Wee Chian Koh                   | Brunei Darussalam’s Trade Potential and Asean Economic Integration: A Gravity Model Approach. | 2013 | GDP, Population, Colonial Relationship, and Trade Agreements have a positive and significant effect on trade, while distance has a negative effect. |
| 2  | Riyandi Saras Anggita, Setyo Tri Wahyudi | The Bilateral Trade of Indonesia: The Gravity Model Approach.               | 2015 | CGDP, PCGDP, Transportation Cost, and REER significantly influence Indonesian exports.                                                      |
| 3  | E. M. Ekanayake, Amit Mukherjee, Bala Veeramachenneni | Trade Blocks and the Gravity Model: A Study of Economic Integration among ASEAN Developing Countries | 2010 | GDP, Population, and Distance have a significant effect on trade.                                                                        |
| 4  | Inmaculada Martinez-Zarzoso, Felicitas Nowak Lehmann | Augmented Gravity Model: An Empirical Application to Mercosur-European Union Trade Flows | 2001 | Infrastructure, Income Differences, and Exchange Rates are important, positive determinants of trade flows.                                |
| 5  | Shaista Khan, Ihtisham ul Haq, Dilawar Khan | Pakistan’s Bilateral Trade: A Gravity Model Approach | 2013 | GDP, GDP per Capita affects trade volume. Whereas distance and dummy variables for cultural similarities show a negative relationship to trade volume. |
| 6  | Mohammad Mafizar Rahman         | A Panel Data Analysis of Bangladesh’s Trade: The Gravity Model Effect | 2003 | Bangladesh trade is positively determined by the size of the economy, per capita GNP differential, and the openness of the Bangladeshi economy. The main determinants of Bangladesh’s exports are the exchange rate, partner country import demand, and Bangladesh’s economic openness. |
| 7  | Yuventus Effendi                | ASEAN Free Trade Agreement Implementation for Indonesian Trading Performance: A Gravity Model Approach | 2014 | GDP, Average Primary Product, Membership of ASEAN, The Time Trend have a positive effect while distance, population, exchange rate, and tariff barrier have a negative effect. |
| 8  | Irwan Shah Zainal Abidin, Mohd Dan Jantan, Nur Azmin Abu Bakar | Analysis of Trade Pattern Between Malaysia and the OIC Member Countries: Gravity Model | 2013 | GDP, PCGDP, Per Capita Gross Domestic Product Differential Between Countries, Trade, FDI have a positive effect while Distance has a negative effect. |
| 9  | Nadya Purnamasari Kaitjily, Husna Leila Yusran | Pengaruh Variabel Struktur Perdagangan Terhadap Arus | 2014 | GDP, PCGDP, FDI, Distance have a positive influence on trade flows.                                                                          |
Wahyudi and Anggita (2015) researched Indonesia’s trade with Indonesia’s top 10 largest export partners. Her research, titled "The Bilateral Trade of Indonesia: The Gravity Model Approach" concluded that the PCGDP, CGDP, Transportation Cost, and REER (Real Effective Exchange Rate) effect significantly on Indonesia's exports.

Effendi (2014) in his research entitled "ASEAN Free Trade Agreement Implementation for Indonesian Trading Performance: A Gravity Model Approach" concluded that GDP, Average Primary Product, Membership of ASEAN, The Time Trend had a positive effect while the distance, population, exchange rate, and set fee barrier effect has a negative effect on bilateral trade.

In addition, Yuniarti (2007) estimated the determinants of Indonesia's Bilateral trade. The determinants included in the model are GDP, distance, population, similarity in economic size, relative differences in endowment factors, and membership in the free trade area. GDP from exporting countries and importers has a positive effect with bilateral trade, the similarity of economic size variables has a positive effect, the economic equality variable (endowment) does not affect bilateral trade with the inconsistency of the Heckscher-Ohlin (HO) theory -an economic theory that proposes that countries export what they can most efficiently and plentifully produce- with the phenomenon of intra-industry trade, the population of trading partners has a positive coefficient on bilateral trade, membership in the free trade area has no effect on bilateral trade and the distance variable has a negative effect on bilateral trade.

Another example, Kim and Park (2004) used the Gravity Model to estimate the effect of trade liberalization and trade facilities on bilateral trade among 15 APEC member countries, using four indexes of trade facilities, namely customs procedures, standards and adjustments, business mobility, information technology, and communication. The results showed that there was a significant positive trade creation effect on the improvement of trade facilitation measurement, which made APEC's efforts to trade facilitation better as an effective policy alternative to complement the tariff reduction policy.

Based on theory and previous researches, this study has a hypothesis that the variable GDP, GDP Per capita, the exchange rate, the population should have a positive influence on bilateral trade flows in Indonesia and the G7 Member countries. While the
Distance variable should have a negative influence on bilateral trade flows against Indonesia and the G7 Member countries.

**RESEARCH METHOD**

Based on the characteristics of the problems that will be examined, the type of research method used is the regression panel. Variables that will be used in this research are Gross Domestic Product (GDP), Gross Domestic Product per Capita (PCGDP), Exchange Rate (ER), Population (POP), and Distance (DIST) using secondary data that is a combination of the time series and cross-section. Time series data from the year 2007 to 2016 and cross-section data is data ranging from Indonesia, Canada, France, Germany, United Kingdom, Italy, Japan, and the United States.

All the variables data used are sourced and gathered from CEIC, World Bank, OECD, ITC, UN Comtrade, and MapCrow. While the tool used to process data in this research is Eviews 9.0 with the method of regression analysis, Data Panel.

**Table 3**

| Variable | Source | Unit | Count | Operational Definition |
|----------|--------|------|-------|------------------------|
| BTF\(_{ij}\) | ITC Trade & UN Comtrade | US$ | | Bilateral Trade Flow (BTF) is the total value of exports and imports of goods and services between countries that conduct joint international trade. (Abidin 2013 et al.). Bilateral Trade Flow data are used based on the annual data period in 2007-2016 |
| GDP\(_{ij}\) | World Bank | US$ | Constant | Gross Domestic Product (GDP) is the total value of the overall value of goods and services produced within a country in a given period (Frank and Bernanke, 2013). GDP data are used based on the annual data period in 2007-2016 |
| PCGDP\(_{ij}\) | World Bank | US$ | | Per Capita Gross Domestic Product (PCGDP) is the level of the ability to pay, a country's purchasing power in the case for obtaining the need for goods and services desired by the community. (Appleyard and Alfred, 2014). PCGDP data are used based on the annual data period in 2007-2016 |
| ER\(_{ij}\) | The OECD | US$ | / | Exchange Rate (ER) is the exchange rate of the currency of a country in the case of instrument transactions of goods and services internationally (Daniels et al. 2015). Data ER refers to annual data from the period in 2007-2016 |
| POP\(_{ij}\) | World Bank | Soul | | The population is the total population of a country (Yuniarti, 2007). The Population data used are based on data from the annual |
Variable | Source | Unit Count | Operational Definition
--- | --- | --- | ---
Dist\(_{ij}\) | Mapcrow.info | KM | Distance is a variable that describes the distance between countries that meet (and Kahouli Maktouf, 2014). The Distance data is used based on the data in the period 2007-2016.

**Source: World Bank, etc.**

The analysis is done using panel regression which means using a combination of data time series and cross section. A panel regression formula used is as follows:

\[
\text{BTF}_{ijt} = \alpha_0 + \beta_1(\text{GDP}_{it}) + \beta_2(\text{GDP}_{jt}) + \beta_3(\text{PCGDP}_{it}) + \beta_4(\text{PCGDP}_{jt}) + \beta_5(\text{ER}_{it}) + \beta_6(\text{ER}_{jt}) + \gamma\beta (\text{POP}_{it}) + \beta_8(\text{POP}_{jt}) + \beta_9(\text{DIST.}_{ij}) + \varepsilon_i\ldots\ldots(1)
\]

Methods of analysis in this study are using regression panel. Thus, this study uses a combination of data time series and cross-section. A panel regression is one of the solutions to the lack of availability of data of the variables used in the study. In regression analysis, data panel, there are 3 usable methods i.e. pooled least square (common effects), fixed effects, and random effects. The best model to explain should be tested with the Chow test and Hausman test.

**RESULTS AND DISCUSSION**

In this study, the data was used in the form of Panel Data. Panel data can be analyzed using three approaches, namely Common Effect, Fixed Effect, and Random Effect. To test the best model between the Common Effect and the Individual Effect (represented by the fixed effect model) Chow Test will be used where the hypothesis is:

- \(H_0: \alpha_1 = \alpha_2 = \alpha_3 = \ldots = \alpha_i, \text{Common Effect}\)
- \(H_1: \alpha_1 \neq \alpha_2 \neq \alpha_3 \neq \ldots \neq \alpha_i, \text{Individual Effect}\)

With assumption:

- If the probability of Chi-square > 0.05, \(H_0\) is accepted
- If the probability of Chi-square < 0.05 then \(H_0\) is rejected

| Method | Probability Chi-square | Decision | Result |
|---|---|---|---|
| Chow Test | 0.0000 | H0 rejected | Individual effect |

**Table 4**

*Source: processed data Eviews 9.0*

By using the Chow test where the null hypothesis (\(H_0\)) is the Common Effect model, the Probability of Chi-Square value of 0.000 < 0.05 is obtained. Thus the null hypothesis (\(H_0\)) is rejected, so the better model to use is estimation with Individual Effect, then the next test is to compare the Fixed Effect with the Random Effect where the test will use the Hausman Test.
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Table 5
Estimation Results for Model Selection Fixed Effect Vs. Random Effect

| Method        | Probability Chi-square | Decision | Result     |
|---------------|------------------------|----------|------------|
| Hausman Test  | 0.0004                 | H0 rejected | Fixed Effect |

Source: processed data Eviews 9.0

By using the Hausman test where the null hypothesis (H0) is the Random Effect model, the probability value of Chi-square is 0.0004 > 0.05. Thus the null hypothesis (H0) is rejected, so a better model to use is estimation with Fixed Effect.

Table 6
Fixed Effect Test Result

| Dependent Variable | Bilateral Trade Flow |
|--------------------|----------------------|
| Independent Variable | Fixed Effect |
| C                  | -1.61E+08 0.0000   |
| GDPi               | -1.99E-09 0.8602   |
| GDPj               | -6.80E-10 0.9520   |
| PCPGDPi            | 2873.928 0.0000   |
| PCPGDPj            | 2921.942 0.0000   |
| Eri                | 7137.250 0.3657   |
| Erj                | 6548.813 0.4066   |
| POPi               | 0.539391 0.0000   |
| POPj               | 0.527545 0.0000   |
| DISTij             | -18646.28 0.0000  |
| R²                  | 0.566218       |
| Adj. R²            | 0.559119       |
| Prob. F-Stat       | 0.000000       |

Source: processed data Eviews 9.0

Table 7
R² Test Result

| Model | Test     | R²       | Adj. R²  |
|-------|----------|----------|----------|
| 1     | Fixed Effect | 0.566218 | 0.559119 |

Source: processed data Eviews 9.0

In the results of data processing from the Fixed Effect model, the coefficient of determination (Adj. R²) of 0.559119 can be obtained, which means that the variation of the independent variables (GDPi, GDPj, PCPGDPi, PCPGDPj, Eri, Erj, POPi, POPj, and DISTij) can explain dependent variable (BTFij) of 55.91%. The remaining 44.09% is a variation of other independent variables outside the model that affect Bilateral Trade Flow between G7 member countries and Indonesia (BTFij).
Table 8
F Test Result

| Model | Test       | Prob. F-Stat | Decisions   |
|-------|------------|--------------|-------------|
| 1     | Fixed Effect | 0.000000     | H0 rejected |

Source: processed data Eviews 9.0

Table 8 shows that the probability value of F-Stat (0.000000) of the model is smaller than 0.05 (0.000000 < 0.05) so that H0 is rejected, this shows that there are proven independent variables (GDPi, GDPj, PCGDPi, PCPGDPj, Eri, Erj, POPi, POPj, and DISTij) influence the dependent variable (BTFij).

Table 9
T Test Result

| Model | Variable | Coefficient | Probability | Decisions   |
|-------|----------|-------------|-------------|-------------|
| 1     | GDPi     | -1.99E-09   | 0.8602      | H0 accepted |
|       | GDPj     | -6.80E-10   | 0.9520      | H0 accepted |
|       | PCPGDPi  | 2873.928    | 0.0000      | H0 rejected |
|       | PCPGDPj  | 2921.942    | 0.0000      | H0 rejected |
|       | Eri      | 7137.250    | 0.3657      | H0 accepted |
|       | Erj      | 6548.813    | 0.4066      | H0 accepted |
|       | POPi     | 0.539391    | 0.0000      | H0 rejected |
|       | POPj     | 0.527545    | 0.0000      | H0 rejected |
|       | DISTij   | -18646.28   | 0.0000      | H0 rejected |

Insignificance at α=5%

Source: processed data Eviews 9.0

From the results of the regression output summarized in Table 9, it can be seen that the t probability value of model 1, in the PCPGDPi, PCPGDPj, POPi, POPj, and DISTij variables has a significance level of α < 5%. This means that the independent variables individually have a significant effect on the Bilateral Trade Flow (BTF) variable. Meanwhile, some variables GDPi, GDPj, Eri, and Erj show a value of α > 5%. This means that individually the GDPi, GDPj, Eri, and Erj variables do not affect the dependent variable on Bilateral Trade Flow (BTFij).

In this study the estimated value of the constant–coefficient model has a significant effect and produces a negative value that is equal to -1.61E + 08, it shows that the low influence of the benefits provided from bilateral trade flows among G7 member countries (Canada, France, Germany, Italy, Japan, Great Britain, USA) and Indonesia in terms of increasing the relationship of trade interactions between countries and development in each of the G7 member countries and also Indonesia.

Based on the results of data processing, the Gross Domestic Product regression coefficient of both GDPi and GDPj, and also the Exchange Rate (Eri and Erj) have no significant effect on Bilateral Trade Flow (BTF). Meanwhile, the Per Capita Gross Domestic Product (PCGDPi and PCPGDPj) had positive and significant coefficient values on Bilateral Trade Flow (BTFij), the partial coefficient values generated were 2873,928 and 2921,942. This is consistent with the hypothesis put forward. And that means, if the PCGDP of the country of origin and PCGDP of the destination country
partially increase by 1 USD, the bilateral trade flows between G7 member countries and Indonesia will increase by 2873,928 USD and 2921,942, ceteris paribus.

It is known here that the community needs to contribute significantly to bilateral trade between the G7 member countries and Indonesia. Communities have individual needs that may not be obtainable from within the country, for example, luxury cars that require pivot from abroad, which will provide prestige for the community. The dynamic and varied needs of the community can be the reason why the PCGDP variable can have a significant and positive effect on bilateral trade between G7 and Indonesian member countries.

Regression coefficients generated from Population variables (POPi and POPj) also produce positive and significant direction signs, this is following the expected hypothesis. The coefficient value of the Population variable that is generated partially is 0.539391 on the POPi variable and 0.527545 on the POPj variable. This can be interpreted that if the population of a country increases by 1 person, bilateral trade between G7 member countries and Indonesia will increase by 0.53939 USD (POPi) and 0.52755 USD (POPj). A large population of a country can make requests for goods and services that vary in terms of quantity demanded or consumed.

Finally, the Distance regression coefficient (DISTij) produces negative and significant data on bilateral trade flows (BTFij) between G7 member countries and Indonesia. The coefficient value generated from data processing is -18646.28, meaning that if the distance between G7 member countries and Indonesia increases 1 kilometer (KM) then the bilateral trade flow between G7 member countries and Indonesia will decrease by 18646.28 USD, ceteris paribus. This is consistent with the hypothesis put forward, Gravity Model Theory states that distance is one of the variables that stretch trade relations between countries.

CONCLUSIONS AND SUGGESTION

Conclusions
This study aims to analyze the determining trade variables on Bilateral Trade Flows between G7 member countries and Indonesia using the Gravity Model approach. From the results of processing the panel regression selected the Fixed Effect method. The following is the conclusion of this research:

1. PerCapita Gross Domestic Product (PCGDP) has a positive value which shows that people’s income in a country determines the purchasing power that can be done by the community. The large purchasing power ability encourages consumer consumerism so that the demand for goods or services also increases. In theory, the increase in demand will be followed by an increase in supply so that there is a market balance or commonly known as equilibrium. From the results of the research that has been produced, it is clear that the purchasing power of the community has a big hand in driving trade both on a domestic and international scale, by the expected hypothesis.
2. Population (POP) has a positive value, this means that the more people who occupy a country, the more economic activities will be carried out. In addition, the more people there will be more diverse needs and desires that must be met so that it will indirectly force the emergence of new markets that can improve the wheels of the economy and trade both domestically and internationally. This works according to the expected hypothesis.

3. Distance (DIST) has a negative value, this indicates that the farther the distance that must be traveled countries that do trade, the smaller the trade that occurs. This can be caused by higher costs, shipping costs that must be done will result in a decrease in efficiency of trade, plus the efficiency in time that must be sacrificed. This is in line with the expected hypothesis that the longer distance will minimize the bilateral trade that can be carried out by the two countries concerned.

4. The results of the constant-coefficient value of processing using the Fixed Effect method produces a negative value. This illustrates that there is still a lack of influence of bilateral trade between the G7 member countries and Indonesia in terms of being the main infrastructure in promoting economic growth and development in the G7 member countries.

Suggestions

Based on the results, discussions, and conclusions from this study, the suggestions that the author can convey in the case of trade flows between G7 member countries and Indonesia are as follows:

1. The government of each member as a regulator must be able to control the quantity and quality of goods and services in bilateral trade to increase GDP and save the related country's foreign exchange.

2. The government of each country concerned should be able to increase the purchasing power parity capability of the people. That is because the purchasing power of the people of each country has a significant contribution to the sustainability of bilateral trade.

3. Local currency has a significant role in trade. Therefore the government as the provider of monetary policy is expected to be able to improve the performance of the local currency of each country by applying a currency stabilization policy.

4. The size of the population of a country illustrates the amount of demand and purchasing power in bilateral trade. Nevertheless, the government of the country concerned must control the demand so as not to cause excess which can hurt the economy.

5. Distance correlates inversely with a country's bilateral trade volume. Nevertheless, distance should not be an obstacle in trading. The way to do this is to facilitate the shipping process, a meeting point or trade house is made so that countries that trade with each other can save on trade costs. Apart from that, it can also be done by reducing tariffs in and out. So that it can improve the efficiency and effectiveness of bilateral trade.

6. Bilateral trade requires the carrying capacity of more adequate infrastructure. Because besides the variables discussed by the author, there are still supporting
factors such as investment, stock market, and so forth. Therefore, the development of more adequate infrastructures is necessary for the governments of the countries concerned to increase the volume of bilateral trade.

Research Limitations
This study has limitations in data, objects, and research variables. Therefore, the researcher suggests that further research be carried out by adding other variables such as FDI, HDI or with a different scope such as G20. So it is expected that further research can provide more complete and new information. In addition, this research is also limited to international trade in the real sector or products produced in a country in a certain period. Researchers hope that this research can be used and developed by subsequent researchers and serve as material for consideration in the future can be applied to their knowledge in Indonesia so that it can be useful for many people.

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