

**THE EFFECT OF IJ-EPA TO INDONESIA EXPORT: INTERRUPTED TIME SERIES ANALYSIS**

**Yuafanda Kholfi Hartono<sup>1</sup>  
A Sumarto Eka Putra<sup>2</sup>**

<sup>1</sup> Directorate of Customs and Excise Information and Technology, Indonesia Customs and Excise, Indonesia

<sup>2</sup> Center for Policy Analysis and Harmonization, Ministry of Finance, Indonesia (2nd author)

Email: yuafanda.kholfi@customs.go.id

Email: a.sumarto@kemenkeu.go.id

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**ABSTRACT**

*Indonesia Japan Economic Partnership Agreement (IJ-EPA) is a bilateral free-trade agreement between Indonesia and Japan, starting from July 1st, 2008. After more than a decade of the implementation, and condition of Indonesia's Current Account Deficit (CAD) in the last two years, there is a question that we need to be addressed: Does the liberalization of IJ-EPA make Indonesia's export value to Japan increase? The main objective of this paper is to evaluate whether the implementation of IJ-EPA is beneficial to increase the Indonesian export market or not. Using the Interrupted time series (ITS) analysis based on data from Statistics Indonesia (BPS), and World Bank Data as independent variables, this article found that the impact of IJ-EPA is decreased from Indonesia's export value to Japan. The government should review IJ-EPA, so this paper proposed some potential export commodities based on the identification of import data from Japan Customs as the demand of Japan and export data of Indonesia as the ability of Indonesia to produce goods and reconciling them. Another recommendation of this paper is escalating socialization so more exporters will know about the benefit of IJ-EPA for their potential market. The result of this study will help all sectors to understand what to do for maximizing the benefit of IJ-EPA so that both Indonesia and Japan can grow together from this bilateral FTA.*

**Keywords:** Exports, FTA, Indonesia, Japan, IJ-EPA, Free Trade

**INTRODUCTION**

Japan is one of the biggest partners of Indonesia in bilateral trade. In the last twenty years, Indonesia exports at least ten billion US\$ of its commodities to Japan while Japan sells its products to Indonesia. Based on Statistics Indonesia (BPS), Indonesia's export to Japan in 2019 reached US\$ 15.946 billion compared to US\$ 180.012 billion of Indonesia's total export value (9.52%). Japan is the big three for the country of destination from Indonesia export commodity after China and the United States.



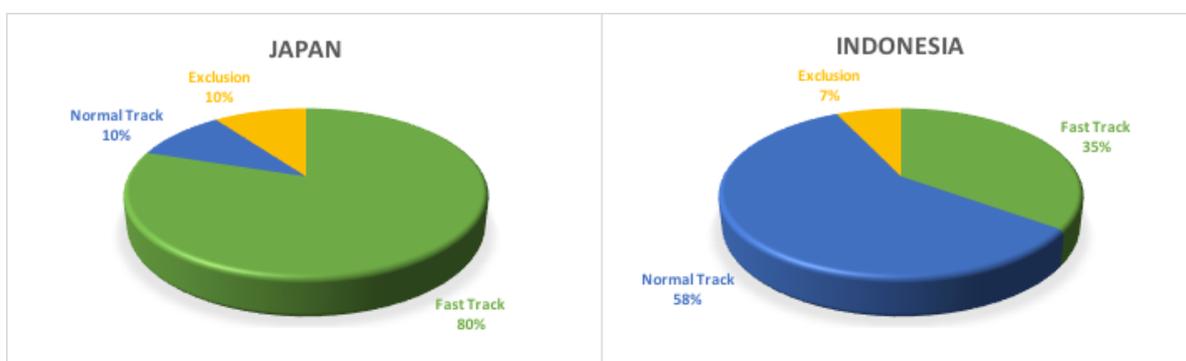
Picture 1. Indonesia Export by Country of Destination in 2019

According to the World Integrated Trade Solution (WITS), Indonesia's export to Japan is dominated by raw materials, consumer goods, and fuels, while Japan's export to Indonesia is dominated by machines, metals, and transportation. In detail, Indonesia export petroleum gas (14%), coal briquettes (13%), and copper ore (5.0%) while Japan export vehicle parts (10%), cars (2.5%), engine parts (2.4%), and large construction vehicles (2.4%) to Indonesia based on OEC in 2017 (The Observatory of Economic Complexity, n.d.). Also, the relationship between Indonesia and Japan is not merely bilateral trade, continuing to a strong connection with more than 1,000 Japanese companies operating in Indonesia, absorbing 400,000 workers (Azly, 2008).

On August 20, 2007, Indonesia officially announced its first bilateral economic agreement with Japan. President Susilo Bambang Yudhoyono and Prime Minister Shinzo Abe signed the agreement that effectively implemented on July 1, 2008. This agreement is called IJ-EPA, a bilateral economic agreement that aims to provide fair, balanced, and measurable benefits through free market access for both countries. Like in the general FTA goal, the main purpose of this FTA is to increase export to each Indonesia and Japan in bilateral trade (Arata et al., 2016). The scope of the IJ-EPA agreement includes Trade in Goods, Investment, Trade in Services, Movement of Natural Persons, Intellectual Property Rights, Rules of Origin, Competition Policy, Energy and

Mineral Resources, Government Procurement, Customs Procedures, Improvement of Business Environment, Cooperation (Ministry of Trade - Indonesia, 2018) There are three classifications of goods in the IJ-EPA scheme; Fast track, Normal track, and Exclusion with benefit goods and service trade, investment, labor shipments, competitiveness, and people's purchasing power performance.

For trade in goods, Japanese concessions; 90% of the tariff post (99% of Indonesia's export value to Japan) is included in IJ-EPA, and 10% of tariff heading 886 is excluded from IJ-EPA (Exclusion List). The total number of Japanese tariff heading is 9,275. Indonesian concessions; 93% of tariff lines (92% of Japan's exports to Indonesia) are included in IJ-EPA, and 7% of all tariff posts (834) are excluded from IJ-EPA (Exclusion List). The number of Indonesian Tariff Post 11,163 (HS 2004) (Ministry of Trade - Indonesia, 2018).



Picture 2. Three tracks in IJ-EPA

There are three tracks in IJEPA to identify the period of tariff reduction in agreement; Fast Track, Normal Track, and Exclusion. For fast-track classification products, about 35% of the tariff post will be reduced to 0% at the time of IJ-EPA's entry into force. For normal track classification products, about 58% of the tariff post will gradually be reduced to 0% within the period of three to 15 years after the entry into force of IJ-EPA. The remaining 7% are excluded from IJ-EPA tariff lines (Setiawan, 2012).

To support the IJ-EPA scheme, Indonesia's government launched the User Specific Duty-Free Scheme (USDIFS). USDIFS is a tariff setting scheme specially granted to legal entities in Indonesia that are eligible for USDIFS facilities for getting the IJ-EPA preference tariff. Exporters have to attach a document called Certificate of Origin (CoO), to declare that their goods are coming from the partner country to get preferential tariff. Later, the data of CoO can be identified to calculate the number of exports using the FTA scheme, so analysts can evaluate how effective this policy implementation is.

There are eight categories in IJ-EPA implementation, according to Minister of Finance Regulation number 94/PMK.011/2008. For category A, import duty was deleted into 0%, starting from the entry into the force period. For the B3 category, the import duty was removed into 0% four times yearly (MOP 25%). For the B5 category, the import duty was deleted into 0% six times annually (MOP 16.7%). For the B7 category, the import duty was removed to 0% in eight times yearly (MOP 12.5%). For the B10 category, the import duty was deleted into 0% 11 times annually (MOP 9.1%). For the B15 category, the import duty was removed to 0% in 16 times yearly (MOP 6.25%). Import duty for P category will be decreased based on specific notes. While X category is excluded from the decrease of the IJ-EPA tariff (Direktorat Teknis Kepabeanan DJBC, n.d.).

Notes for P category consist of 15 points (Annex of Minister of Finance Regulation number 94/PMK.011/2008);

- For commodities with a 5% duty tariff, it will be reduced to 0% in January 2010
- Regulated in a separate minister of finance regulation regarding the USDFS

Currently, Indonesia has eight regional FTA and nine bilateral FTA agreements, while Japan has 20 FTAs (Ministry of Trade - Indonesia, 2018). For regional FTA, Indonesia is involved in ASEAN Economic Community, AC-FTA, AK-FTA, ASEAN-Japan FTA, ASEAN-India FTA, ASEAN-Australia-New Zealand FTA, and ASEAN-Hongkong FTA, and Regional Partnership Economic Partnership (RPEC). Meanwhile, Indonesia has three Bilateral FTAs with on-going review and ratification process, and six Bilateral FTAs within negotiation status. Moreover, Japan currently has 15 agreements that have been implemented, and five more are on-going negotiations.

This paper aims to evaluate whether the implementation of IJ-EPA is beneficial for Indonesia's export market or not. In the Bilateral Free Trade Agreement like IJ-EPA, both countries agree to implement lower tariffs on specified products. By agreeing to charge lower tariffs of import duty, both parties expect bilateral trade between them to increase since exporters will pay lower costs because of the preferential tariff. However, there are a lot of factors to ensure the implementation of bilateral FTA affects bilateral trade. By reviewing the trade-off in the FTA based on the outcome, we hope the government can evaluate the current FTAs to be more beneficial for the business sector. The analysis in this paper can be used to assess other FTAs so the government will get more significant benefits from FTAs that the government already made.

## **LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

In bilateral free trade agreement (FTA), both governments will agree to execute lower tariffs than the MFN tariff, which will stimulate the volume of bilateral trade in both countries. Theoretically,

countries gain a significant amount in their exports by paying less import duty to their destination countries. Several studies with different techniques that focus on international trade and the countries' relationship have explained why there is always a good way for countries to have partners in the International trade perspectives.

According to Sadono Sukirno in Apridar (2012) in Gocklas C.S & Sulasmiyati (2017), benefits of international trade including: countries will obtain goods that cannot be produced domestically and realize benefit from specialization, help countries to expand the market and add profits, and transfer of modern technology. These advantages are stronger whenever FTA applied to the system either between countries or among regions in the specific area. Arakaki, in 2012 stated that FTA removes policy instruments by which nations have been able to buffer and control the impacts of external trade on their local economies. While the lowering of tariff barriers has resulted in more significant trade between countries, it has also resulted in local enterprises becoming more vulnerable to competition from overseas.

Positive impacts of FTA between two countries had been reported in the previous study. Ciuriak and Xiao (2014) assessed the impact of the Canada-Korea Free Trade Agreement (CKFTA), which reached in March 2014. They used a data model based on changes in each country's scores on the OECD's Services Trade Restrictiveness Index (STRI) for bilateral trade to predict the impact of CKFTA until 2035. They assumed a utilization rate of 63% the PPZ assumption used in Petri, Plummer, and Zhai in 2011 and 2013, and concluded that bilateral export gains are also well-balanced. In their finding, Korea expanded its exports of goods to Canada by 19% or US\$1.7 billion, and Canada expanded its bilateral exports to Korea by 26% or US\$1.9 billion. Another study by Arata, Shujiro, and Kazuhiko (2016) found the tariff reduction of Japan Mexico FTA (JMXFTA) increases the value of product exported (intensive margins), and no clear evidence is found on the effect of the probability to export specific goods (extensive margin). It proves that in the short-term, the JMXFTA has a more favorable impact on existing exporters than on new export market players.

Other measurements of FTA confirmed that this practice advantaged the country and region altogether. Lakatos and Nilsson (2017) examine the benefit of FTA between European Union and Korea (EU-Korea) by comparing the negotiation process (the start of negotiations, initialing of the agreement, and entry into force) and the period before negotiations started. The results show that the FTA has had a positive impact on exports on both margins. Bhattacharyya and Mandal in 2016 analyzed the impact of AI-FTA using data from the World Integrated Trade Solution (WITS). The conclusion is the aggregate value of the net surplus with the government after taxing gainers and

subsidizing losers was positive up to 2012. But it has declined since 2013. The study identifies the decline caused by the global slowdown.

In the IJ-EPA case, numerous studies display contra predicted results about the effect of IJ-EPA to Indonesia. IJ-EPA lead to optimistic increasing in the export value of Indonesia product to Japan using T-test (Gocklas C.S & Sulasmiyati, 2017) and significantly increase the value of Indonesia's non-oil and gas exports to Japan but has no significant impact on the increase of non-oil imports from Indonesia using monthly data from January 1990 to June 2014 (Ardiyanti, 2015). In addition, The IJ-EPA tariff scheme has had an impact on the increase of Indonesian export value to Japan on average of USD 2.727 billion per year (Setiawan, 2012). However, with the measurement of factors that might affect export, Harahap and Easter (2015) using the Error Correction Model resolved Indonesia's participation in the IJ-EPA does not affect the short run or long term of the total export (ECM). Export to Japan relies on GDP of Japan and Indonesia, and Foreign Direct Investment (FDI).

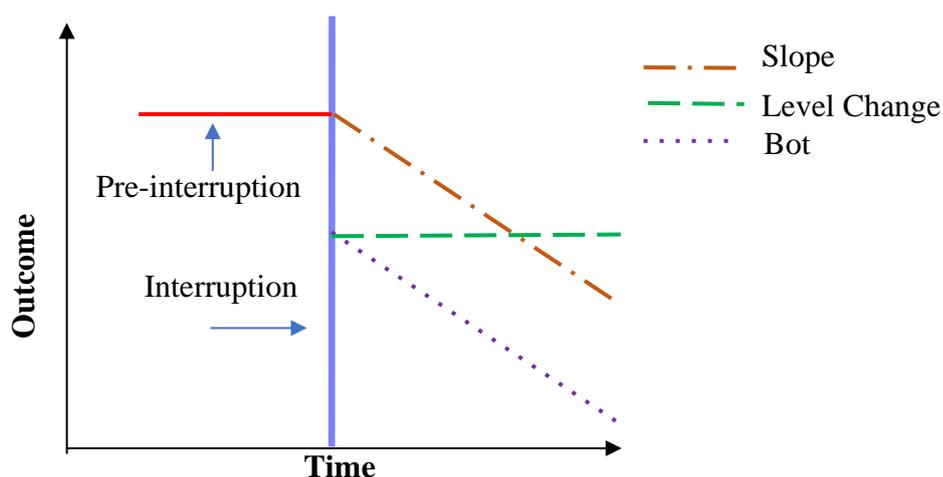
Different findings of the IJ-EPA case withdraw our attention to conduct new research on the IJ-EPA perspective. Our hypothesis is IJ-EPA will increase the export value of Indonesia by implementing lower tariffs than MFN tariffs, which will stimulate the volume of bilateral trade in both countries. Exporters will choose Japan as the destination country of their commodity because they will pay less in import duty that can maximize their profit. While exporters choose Japan as the destination country for export commodities, the volume of Indonesia export to Japan will increase, and the value will increase as well following the volume.

Theoretically, with all of the FTAs that Indonesia has, bilateral trade between Indonesia and Japan should be increased since both countries reduced their tariff barrier. However, in the last two years, Indonesia's trade balance has been in deficit. In 2018, export value reached US\$ 180.012 billion, while import value increased from US\$ 156.985 billion to US\$ 188.711 billion. One year later, Indonesia's export value falls into US\$ 167.497 billion, while import value stands at US\$ 170.727 billion. This number triggered a question, does FTAs that Indonesia has, including IJ-EPA, work to stimulate export value to the partner countries? We put that question as a research problem in this paper. That question is important since by implementing FTA with partner countries, Indonesia will lose the potential revenue from import duty, so the government has to ensure that the implementation of bilateral FTA like IJ-EPA give benefits to Indonesia.

## RESEARCH METHODS

This paper uses the Interrupted Time Series analysis to conclude whether Indonesia's export value to Japan is significantly affected by IJ-EPA or not. This paper hypothesizes that Indonesia export will significantly increase after the implementation of IJ-EPA. The reason for this hypothesis is because the government gives subsidy by giving lower tariffs, so it should trigger more massive exports to Japan.

Interrupted time series (ITS) is a quasi-experimental design that evaluates an intervention effect, using longitudinal data (Kontopantelis, Doran, Springate, Buchan, & Reeves, 2015). Quasi-experimental studies do not use randomization and may use both pre- and post-intervention data. The advantage of using ITS is this method has been considered as one of the most robust quasi-experimental designs (Hudson, Fielding, & Ramsay, 2019). It is a pre-post policy implementation design that measures the effect of policy implementation in the policy object. Lopez Bernal, Cummis, and Gasparrini in 2016 stated that in some evaluations, it might be difficult to define when the intervention began and to differentiate the effects of different components. It necessarily requires the intervention to be introduced overnight, but the period of implementation should be well defined so that it can be considered separately. There are also six ITS models showed by that describe the result of policy; level change, slope change, level, and slope change, slope change following a lag, temporary level change, and temporary slope change leading to a level change Lopez (Lopez Bernal, Cummins, & Gasparrini, 2016).



Picture 3: Interrupted Time Series Design

However, ITS cannot explain why policy did not work (Kluczynski, 2018), and for this reason, literature review is necessary to investigate deeper understanding on causes and to produce better track recommendations.

Several data streams have been utilized to support our finding. We examine ten-year time-series data to identify the pattern of Indonesia export growth to Japan and vice versa from Statistics Indonesia (BPS) for import and export data between Indonesia and Japan from 1999 to 2019 while data from *investing.com* are valuable to show exchange rate of IDR to JPY from 1999 to 2019. For getting the total export of Indonesia by commodity in the recommendation, this paper used data from Indonesia Customs and Excise. Furthermore, we collected data from Japan Customs to get importation data of Japan group by the destination country and 6-digit HS Code to reconcile what Japan imports from other countries. In addition, the Yearly Gross Domestic Product of Japan has been withdrawn from World Bank Open Data for year 1999 to 2019.

To demonstrate our findings, we run a simple regression technique using R and several software. All the dataset was imported to R and applied to linear regression to obtain statistical results. GDP after time interruption which represents the ability of Japan to buy Indonesia commodities is our independent variable, while leaving the export value of Indonesia as a dependent variable. Last, *Tableau* and *Excel* are the two applications to exhibit visualizations of each factor that related to the result of the analysis.

## ANALYSIS AND DISCUSSION

Standard model of ITS used in this paper is:

$$Y_t = \beta_0 + \beta_1 T + \beta_2 X_t + \beta_3 TX_t$$

where  $\beta_0$  = intercept,  $T$  = time,  $X_t$  = study phase,  $TX_t$  = time after interruption. Before the implementation of IJEPA, the model of ITS used identified by:

$$Y_t = \beta_0 + \beta_1 X + \varepsilon$$

$\beta_0$  represents the baseline level at  $T = 0$ ,  $\beta_1$  is interpreted as the change in outcome associated with a time unit increase (representing the underlying pre-intervention trend),  $\beta_2$  is the level change following the intervention and  $\beta_3$  indicates the slope change following the intervention (using the interaction between time and intervention:  $TX_t$ ).

We put a model from Lopez Bernal, Cummins, and Gasparrini in 2016 as a minimum of variables required for an ITS analysis:

- I.  $T$  : the time elapsed since the start of the study in with the unit representing the frequency with which observations are taken (e.g. month or year);
  - II.  $X_t$  : a dummy variable indicating the pre-intervention period (coded 0) or the post-intervention period (coded 1);
  - III.  $Y_t$  : the outcome at time  $T$  (Lopez Bernal, Cummins, & Gasparrini, 2016).
- Our research utilized data from year 2008 as the implementation year of IJEPA since this agreement was implemented on July 1, 2008. In addition, we put two independent variables to predict more accurate outcome:
- IV. GDP: Gross Domestic Product of Japan to depict the ability of Japan in buying Indonesia commodities.
  - V. ER: Exchange Rate of JPY to IDR

Table 1. Model Simulation

VARIABLES	-1 Y	-2 Y	-3 Y	-4 Y	-5 Y
Intercept	8.465 x 10 <sup>9</sup> **	-1.829 x 10 <sup>10</sup> *	-2.073 x 10 <sup>10</sup> **	-3.089 x 10 <sup>9</sup>	-1.288 x 10 <sup>10</sup> .
T	1.481 x 10 <sup>9</sup> **	1.447 x 10 <sup>9</sup> **	1.534 x 10 <sup>9</sup> ***	1.745 x 10 <sup>9</sup> ***	1.885 x 10 <sup>9</sup> ***
X	7.948 x 10 <sup>9</sup> *	1.526 x 10 <sup>9</sup>		4.515 x 10 <sup>9</sup>	
TX	-2.551 x 10 <sup>9</sup> ***	-2.117 x 10 <sup>9</sup> ***	-2.111 x 10 <sup>9</sup> ***	-1.453 x 10 <sup>9</sup> *	-1.601 x 10 <sup>9</sup> **
gdpj		5.921 x 10 <sup>-3</sup> **	6.394 x 10 <sup>-3</sup> **	8.049 x 10 <sup>-3</sup> ***	8.696 x 10 <sup>-3</sup> ***
er				-3.350 x 10 <sup>8</sup> *	-2.523 x 10 <sup>8</sup>
Multiple R squared	0.6778	0.8122	0.8096	0.8624	0.8437
Adjustment R squared	0.621	0.7652	0.776	0.8165	0.8046
p-value:	0.0001908	1.16 x 10 <sup>-5</sup>	2.352 x 10 <sup>-6</sup>	5.562 x 10 <sup>-6</sup>	2.767 x 10 <sup>-6</sup>
F-statistic:	11.92	17.3	24.1	18.8	21.58

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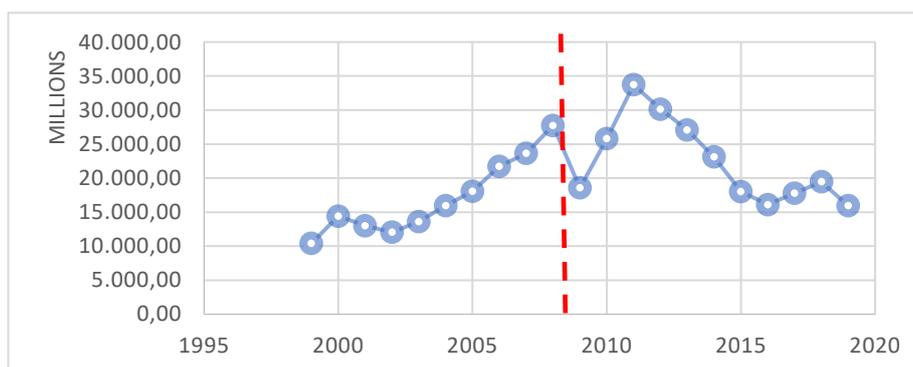
After getting the variables, we run those variants of the model to get the best result using R. In the first model (-1) described at the table below; we put T, X, and TX like the standard model of Lopez Bernal, Cummins, and Gasparrini used in 2016. We got all of the variables are significant, and multiple R squared is 0.6778. For the next model (-2), we included the Gross Domestic Product of Japan and got a bigger R squared 0.8122. However, variable X in the model -2 is not significant. So for the next model (-3), we excluded variable X and got multiple R squared 0.8096 with all

variables are significant. On model -4, we put the exchange rate variable to test whether it would increase R squared or not. And we got higher multiple R squared at 0.8624 with X variable is not significant. Finally, we took variable X out and got multiple R squared 0.8437, with all of the variables significant. This result means variation of changes in exchange rates, changes in Japan GDP, changes in time elapsed of IJ-EPA implementation affect changes in export value of Indonesia to Japan by 84.37%, while (15.63%) the rest is explained by other variables not included in the model.

Based on the result we formulated the model as:

$$Y_t = -1.288 \times 10^{10} + 1.885 \times 10^9 T + (-1.601 \times 10^9) TX_t + 8.696 \times 10^{-3} gdp_{jt} - 2.523 \times 10^8 er_t$$

The results show that variable dummy time before and after implementation (TX) and exchange rate have a negative mark, meaning that these two factors caused the effect of IJ-EPA after implementation is decreasing. Indonesia's export to Japan increased immediately from 1999 from US\$ 10 billion to US\$ 27.74 billion in 2008 (Figure 4). Then in 2009, Indonesia's export to Japan suddenly decreased to US\$ 18.57 billion. As we know, there was a global financial crisis in 2008. As we can see, before the intervention of IJ-EPA (2003-2007), imports from Japan to Indonesia increased steadily. After the implementation in 2008, the slope of importation from Japan became higher until 2012. And it decreased until 2016 then started to rise again in 2017. Trade balance surplus in the period after IJ-EPA implementation showed a decrease except in 2011 (Ardiyanti, 2015).

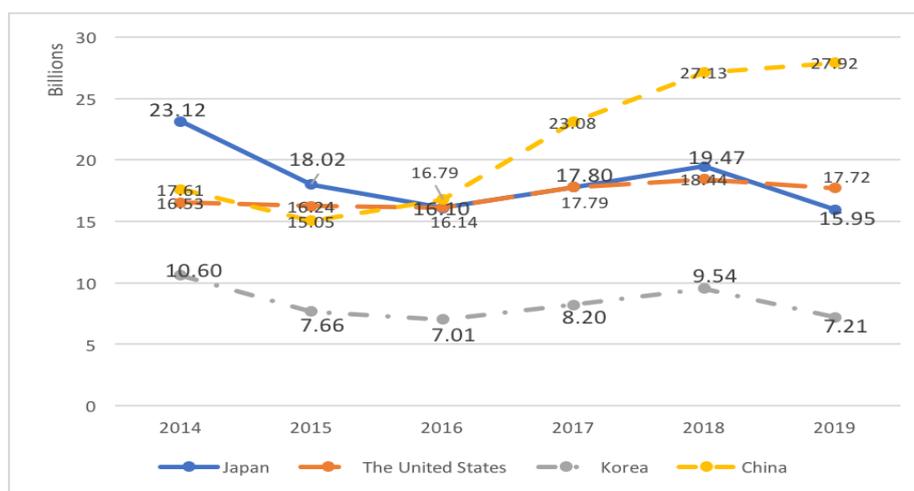


Picture 4. Indonesia's Export Value to Japan

We also noted that in 2011, there was a time when export Indonesia to Japan fell. The earthquake and tsunami that hit East Japan on March 11, 2011, made the value of Indonesia's non-oil exports to the country during March 2011 fall by US\$ 113.78 million or 6.92% from the previous month. This natural disaster influenced the purchasing power of Japan and affected Japanese import from Indonesia. This variable proves that in bilateral trade, we have to cover both

producers' and consumers' ability to buy the commodities. Factories across the country shut or slowed output due to supply chain upheaval, power outages caused by the chaos at the Fukushima nuclear plant, or outright damage from the natural disaster (Schuman, 2011).

In 2012, BBC Indonesia reported that reasons for the turndown of the economics of Japan are the global economic downturn and anti-Japanese protests in China that hit the country's exports, while domestic consumption declined (BBC Indonesia, 2012). It is reflected from Japan's GDP that decreased after 2012, so did Indonesia's export to Japan. In 2014, Japan was seeking to recover from a contraction since consumer tax rises were imposed in the second quarter, which closed consumer funds and threatened to bring Japan into a recession caused exports declined 1.3% in August from a year earlier. In 2016, Japan's trade balance generally declined in recent months as the value of the yen rose against the dollar. It makes Japanese products less salable in overseas markets, but also reduces the cost of imported oil and gas and other commodities. A bigger factor is the continued slowdown in China's economy, one of Japan's largest export markets (Voice of America, 2016).

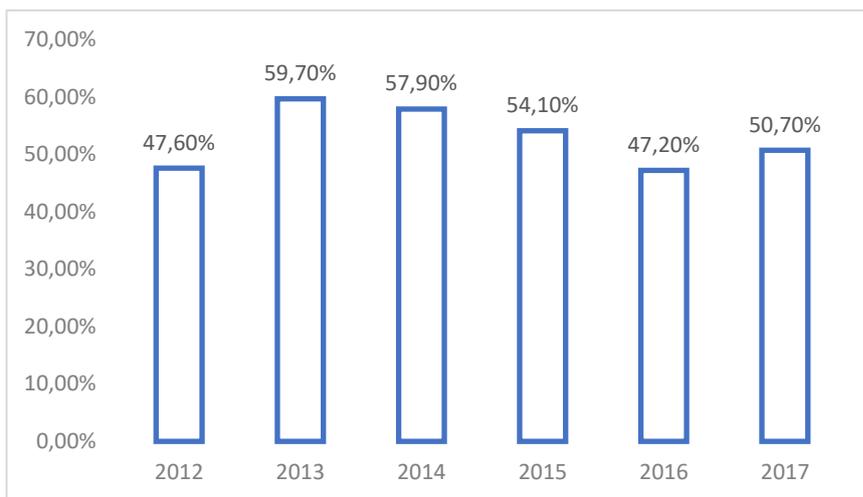


Picture 5. Comparison of Indonesia Export Value by Top Country of Destination in US\$

Based on the World Bank Data, the total export value of Indonesia decreased significantly from US\$235.095 billion in 2011 to US\$177.884 billion in 2016. This value was still considered higher compared to export performance in 2008 reached US\$152.09 billion. However, the declining value of export to Japan has a sharper slope if we compare it to other top destination countries such as China, The United States, and Korea (Figure 5). This data proved that the decline in Indonesia export to Japan is not about Indonesia's ability to export is decreasing. What we are trying to underline is about the dependency. Indonesia exports its 11% of total export value to Japan while imports 8.9% of its total import value from Japan. However, Japan exports 1.8% of total export value to Indonesia while imports 3.0% of its total import value from Indonesia (The

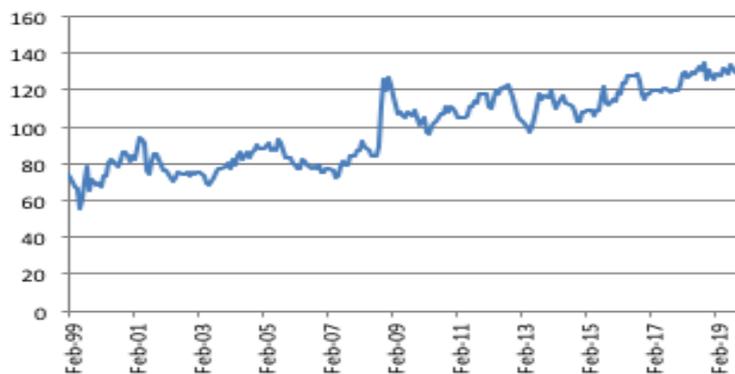
Observatory of Economic Complexity, n.d.). Indonesia is more dependent on Japan in terms of export and import, so besides increase the export, the government should start to find new markets for Indonesia products.

Another reason for the ineffectiveness of the IJ-EPA is the low utilization of the IJ-EPA tariff. In 2008, SKA utilizing IJ-EPA was only 15.25% of total national manufacturing exports. Sequential in 2009, 2010, and 2011, IJ-EPA-based SKA were 28.16%, 21.30%, and 27.63% (Bisnis Indonesia, n.d.).



Picture 6. IJ-EPA Utilization in Indonesia's Export to Japan

Exchange rate of IDR to YEN from 1999 to 2019 increased from 73.96 to 127.79 Yen per 1 IDR or increased 72.78%. It reflects that at the same volume, the export value of Indonesia to Japan should increase 72.78% in the twenty years if other factors do not change (*ceteris paribus*). Based on our model, exchange rate is one of the reasons why export value Indonesia to Japan is decreasing.



Picture 7. IDR-JPY Exchange Rate (Investing.com)

So the conclusion of this paper is different from what Setiawan found in 2012, Ardiyanti in 2015, and Gocklas C.S and Sulasmiyati concluded in 2017 that IJ-EPA significantly affects Indonesia export to Japan. Indonesia's export value should be increasingly bigger than what happened after implementation, based on the interrupted time series method. Indonesia should find ways to get more benefits from this agreement, at the same time, meet the needs of the Japanese domestic market. The result above is in line with what Harahap and Ester stated in 2015 that GDP and exchange rate are significantly affect export value in IJ-EPA.

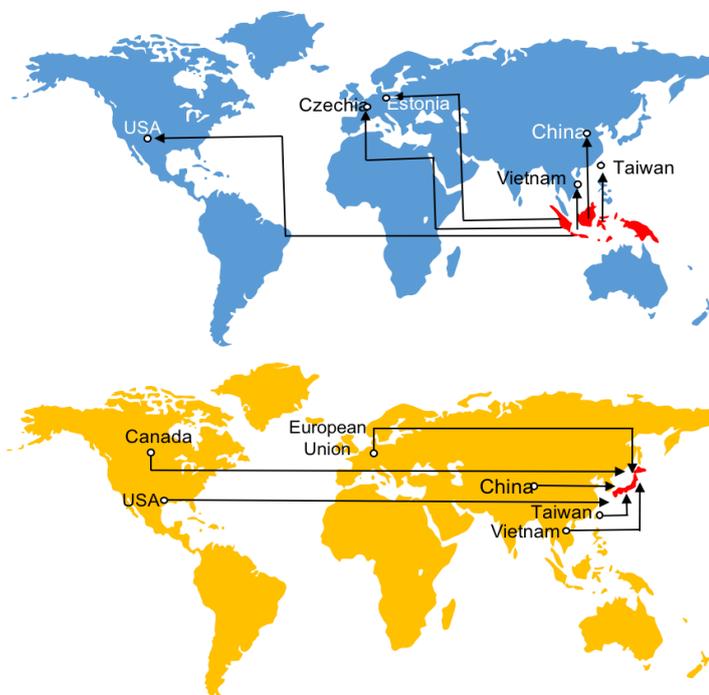
For recommendation of this paper, we listed potential commodities that can be exported to Japan. This list is taken from 6 digit HS of export commodities of Indonesia that are sent to other countries except for Japan between January 2018 and August 2019. Then we rank it to identify which commodities are Indonesia more capable of supplying it to meet the Japanese market. Then we collected the importation of Japan By 6-digit HS code in the same period from around the world. We deleted all commodities that were already imported from Indonesia. Then we rank it to identify which products are being a priority for Japanese. We use the six-digit HS code because it is applied internationally, so the same HS code means the same goods for both Indonesia and Japan.

The commodities below are also not included in prohibited commodities to be exported from Indonesia, such as raw minerals, it was excluded first before listing it. Of course, this recommendation will face quality constrains since Japan's market is really concerned with the quality of import products. However, we can deliver this concern to related authorities such as the Ministry of Industry. Education and support to improve the quality of our export commodities will enlarge their market globally, so the possibility to penetrate Japan's market will be possible to be implemented.

Table 2. Potential Product of Indonesia for Export to Japan

No	HS Code	Description
1	902190	Appliances; worn, carried or implanted in the body, to compensate for a defect or disability
2	300420	Medicaments, In Measured Doses, Etc., Containing Antibiotics,
3	851761	Base Station
4	720839	Iron and steel, Of a thickness of less than 3 mm:
5	240120	Tobacco, partly or wholly stemmed/stripped:
6	050510	Feathers of a kind are used for fillers; fuzz
7	741110	Copper vessels and pipes are refined from copper
8	290124	Buta-1,3-diena dan isoprena

Let us focus on feather poultry. Based on the data that we have, Indonesia exports this commodity to some European countries like Estonia and the Czech Republic. In addition, Indonesia also exports feather poultry to The United States of America, China, Vietnam, and Taiwan. Japan also imports the same commodity from the United States and Canada.



Picture 8. Export Feathers from Indonesia and Import Feathers to Japan

From the distribution cost, it would be better if Japan imported feather poultry from Indonesia since the distance between the two countries is nearer than the American region. Freight, insurance, and import tariffs also will make the price of that goods more expensive since both Indonesia and Japan do not have a Free Trade Agreement with the USA. Of course, Indonesia will face a quality problem. But the Ministry of Industry can give some support and guidance for exporters to meet Japan's market demand in terms of the quality of the product.

Government agencies can implement this recommendation by doing their functions. Customs can identify the exporters that produce the recommended commodities. They can give guidance to the exporters of feather poultry so they can penetrate their new market to Japan. The Ministry of Industry can assist in shaping the quality of the product so that exporters can meet market demand in Japan. The Embassy can support by collecting information about the quality of those demanded products and share it with the Ministry of Industry. The Embassy can try to get information about the importers of potential commodities and help to promote them to potential consumers in Japan. By identifying what Japan needs and proposing the supply from Indonesia, both countries will get more benefit in implementing IJEPA.

## **CONCLUSION**

Based on the evidence explained above, this paper concludes that the effect of IJ-EPA is decreasing to Indonesia export to Japan. It is because of several factors, such as the lack of participation from domestic exporters to use the IJ-EPA scheme. The exchange rate and GDP of Japan also contribute to decreasing the IJ-EPA effect on export. Another issue is Indonesia needs to find potential commodities exported to Japan, based on Japan's market needs. IJ-EPA is a bundled agreement, including investment and movement natural person (care worker) aspect, but still, Indonesia needs to improve export to support trade account deficit. The government should focus on what Japan needs.

Another reason for the relatively low uptake of FTAs was that firms have limited information about FTAs. ASEAN countries, including Indonesia, have engaged in six regional FTAs and several numbers of bilateral FTAs. However, more than 60 percent of respondents across countries in the manufacturing sector claimed that the information about FTAs and how to use them was still limited or very limited. Government websites were cited as the top sources for obtaining information about FTAs, including their procedures and costs (Urata & Fukunaga, 2016). Further socialization is needed for a better understanding of the stakeholders. The government should package it in a modern way so it will be easy for exporters to understand it. Something else that

should be shared is the exclusion of IJ-EPA commodities. The government should publish it so potential exporters can identify whether their products will get preferential tariff of IJ-EPA or not.

## LIMITATIONS AND SUGGESTIONS

This paper did not identify which commodities that get reduction tariff from IJ-EPA because of the difficulties for getting the data. As a suggestion for next research, we propose more comprehensive research for getting an accumulative impact on IJEPA since the agreement not only consists of trade in goods but also other sectors.

## REFERENCES

- AJG Simoes, CA Hidalgo. The Economic Complexity Observatory: An Analytical Tool for Understanding the Dynamics of Economic Development. *Workshops at the Twenty-Fifth AAAI Conference on Artificial Intelligence*. (2011)
- Arata, K., Shujiro, U., & Kazuhiko, Y. (2016). *Estimating the Impacts of FTA on Foreign Trade: An analysis of extensive and intensive trade margins for the Japan-Mexico FTA*. 25.
- Azly, E. (2008, July 1). *Indonesia-Japan economic partnership agreement goes into effect tomorrow* / bilaterals.org. Retrieved May 29, 2018, from <https://www.bilaterals.org/?indonesia-japan-economic>
- Bhattacharyya, R., & Mandal, A. (2016). India–ASEAN Free Trade Agreement: An ex post evaluation. *Journal of Policy Modeling*, 38(2), 340–352. <https://doi.org/10.1016/j.jpolmod.2016.02.001>
- BBC Indonesia. (2012, November 12). *BBC Indonesia - Dunia - Ekonomi Jepang terus melemah*. Retrieved May 30, 2018, from [http://www.bbc.com/indonesia/dunia/2012/11/121112\\_japaneeconomy.shtml](http://www.bbc.com/indonesia/dunia/2012/11/121112_japaneeconomy.shtml)
- Bisnis Indonesia. (n.d.). *Kemenperin: RI Siap Berpaling dari IJEPA (headline)*. Retrieved May 23, 2018, from [http://www.kemenperin.go.id/artikel/10785/RI-Siap-Berpaling-dari-IJEPA-\(headline\)](http://www.kemenperin.go.id/artikel/10785/RI-Siap-Berpaling-dari-IJEPA-(headline))
- Budiarti, F. T., & Hastiadi, F. F. (2015). *Analisis Dampak Indonesia Japan Economic Partnership Agreement terhadap Price-Cost Margins Industri Manufaktur Indonesia Impact Analysis of Indonesia Japan Economic Partnership Agreement to Price-Cost Margins Indonesia's Manufacture Industry*. 15(2), 18.
- Caswell, J. (n.d.). *Interrupted Time Series Analysis for Single Series and Comparative Designs: Using Administrative Data for Healthcare Impact Assessment*. Retrieved from [https://www.sas.com/content/dam/SAS/en\\_ca/User%20Group%20Presentations/Health-User-Groups/ITS\\_SAS.pdf](https://www.sas.com/content/dam/SAS/en_ca/User%20Group%20Presentations/Health-User-Groups/ITS_SAS.pdf)
- Ciuriak, D., & Xiao, J. (2014). The Impact of the Canada-Korea Free Trade Agreement as Negotiated. *East Asian Economic Review*, 18(4), 425–461. <https://doi.org/10.11644/KIEP.JEAI.2014.18.4.288>
- Civic Consulting and the Ifo Institute. (2017). Evaluation of the Implementation of the Free Trade Agreement between the EU and its Member States and the Republic of Korea—*Interim Technical Report Part I: Synthesis Report*. 450.

- Direktrat Teknis Kepabeanan DJBC. (n.d.). *Petunjuk Pelaksanaan Impor Barang Dalam Rangka Skema IJ-EPA*. Retrieved from <http://itpc.or.jp/wp-content/uploads/pdf/ijepa/Presentasi%20IJ-EPA%20Bea%20dan%20Cukai.pdf>
- Gocklas C.S, L., & Sulasmiyati, S. (2017). Analisis Pengaruh Indonesia-Japan Economic Partnership Agreement (IJEPA) Terhadap Nilai Perdagangan Indonesia-Jepang (Studi Pada Badan Pusat Statistik Periode 2000-2016). *Jurnal Administrasi Bisnis*, 50, 191–200.
- Harahap, I. K., & Esther, A. M. (2015). *Dampak Penerapan Indonesia-Japan Economic Partnership Agreement Terhadap Ekspor Indonesia ke Jepang*, 11.
- Hudson, J., Fielding, S., & Ramsay, C. R. (2019). Methodology and reporting characteristics of studies using interrupted time series design in healthcare. *BMC Medical Research Methodology*, 19(1). <https://doi.org/10.1186/s12874-019-0777-x>
- Investing.com. (n.d.). *JPY IDR Historical Data* - Investing.com. Retrieved May 22, 2018, from <https://www.investing.com/currencies/jpy-idr-historical-data>
- Kluczynski, C. (2018, July). *Interrupted Time Series Analysis*. Presented at the Athabasca University. Retrieved from <https://www.youtube.com/watch?v=IGHrYwhOtO0>
- Komala, A. (2008). Indonesia Japan Economic Partnership Agreement. *Indonesian Journal of International Law*, 5. Retrieved from <https://media.neliti.com/media/publications/65750-ID-none.pdf>
- Kontopantelis, E., Doran, T., Springate, D. A., Buchan, I., & Reeves, D. (2015). *Regression based quasi-experimental approach when randomisation is not an option: interrupted time series analysis*. *BMJ*, 350(jun09 5), h2750–h2750. <https://doi.org/10.1136/bmj.h2750>
- Lakatos, C., & Nilsson, L. (2017). The EU-Korea FTA: anticipation, trade policy uncertainty and impact. *Review of World Economics*, 153(1), 179–198. <https://doi.org/10.1007/s10290-016-0261-1>
- Lopez Bernal, J., Cummins, S., & Gasparrini, A. (2016). Interrupted time series regression for the evaluation of public health interventions: a tutorial. *International Journal of Epidemiology*, dyw098. <https://doi.org/10.1093/ije/dyw098>
- Ministry of Trade - Indonesia. (2018). *Factsheet Indonesia-Japan Economic Partnership Agreement (IJEPA)*. Retrieved from [http://ditjenppi.kemendag.go.id/assets/files/publikasi/doc\\_20180515\\_fact-sheet-indonesia-japan-economic-partnership-agreement-ijepa1.pdf](http://ditjenppi.kemendag.go.id/assets/files/publikasi/doc_20180515_fact-sheet-indonesia-japan-economic-partnership-agreement-ijepa1.pdf)
- Mursitama, T. N., & Sabrina, A. (2019). *Implementation Of Indonesia Japan Economic Partnership Agreement: A Comparison Of User Specific Duty Free Scheme And Manufacturing Industrial Development Center Programs*. 8(07), 7.
- Portal Informasi Indonesia. (2019). *E-SKA, Surat Keterangan dari Kementerian Perdagangan*. Retrieved April, 12, 2020, from <https://www.indonesia.go.id/layanan/perdagangan/sosial/e-ska-surat-keterangan-dari-kementerian-perdagangan>
- Safitri, R. M. (2018). *Indonesia-Japan Bilateral Relations: The Implementation of Indonesia-Japan Economic Partnership Agreement on The Deployment and Acceptance of Indonesian Migrant Workers (Nurses) to Japan in 2008-2015*. 109.
- Sandori, P. S. (2016). *Kerugian Indonesia dalam Kerjasama Indonesia Japan Economic Partnership Agreement (IJEPA)*. 21.

- Schuman, M. (2011, May 19). *Why Japan's earthquake caused a recession* | TIME.com. Retrieved May 30, 2018, from <http://business.time.com/2011/05/19/why-japans-earthquake-caused-a-recession/>
- Setiawan, S. (2012). Analisis Dampak IJEPA. *Journal of Economic and Business*, 17, 18. [https://www.kemenkeu.go.id/sites/default/files/2014\\_kajian\\_pkrb\\_03.%20dampak%20ijepa.pdf](https://www.kemenkeu.go.id/sites/default/files/2014_kajian_pkrb_03.%20dampak%20ijepa.pdf)
- The Observatory of Economic Complexity. (n.d.). *OECD - Products that Japan exports to Indonesia (2016)*. Retrieved May 29, 2018, from [https://atlas.media.mit.edu/en/visualize/tree\\_map/hs92/export/jpn/idn/show/2016/](https://atlas.media.mit.edu/en/visualize/tree_map/hs92/export/jpn/idn/show/2016/)
- The World Bank. (2019). *GDP (current US\$)—Japan*. Retrieved from <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=JP>
- Urata, S., & Fukunaga, Y. (2016). *How Do Exports and Imports Affect the Use of Free Trade Agreements? Firm-level Survey Evidence from Southeast Asia*. 30.
- Voice of America. (2016, 10). *Meski Ekspor Turun 7%, Perdagangan Jepang Surplus*. Retrieved May 30, 2018, from <https://www.voaindonesia.com/a/meski-ekspor-turun-7-persen-perdagangan-jepang-surplus/3563491.html>
- World Integrated Trade Solutions. (2019). *Indonesia Product Exports to Japan 2018*. Retrieved from World Integrated Trade Solutions website: <https://wits.worldbank.org/CountryProfile/en/Country/IDN/Year/2018/TradeFlow/Export/Partner/JPN/Product/all-groups>