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Degree of Master of International Studies

**Analysis of the Indonesia-Japan Economic Partnership
Agreement:
Impact on Trade and Welfare**

August, 2015

Development Cooperation Policy Program

Graduate School of International Studies

Seoul National University

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**Analysis of the Indonesia-Japan Economic Partnership Agreement:
Impact on Trade and Welfare**

A thesis presented

by

Sigit Hariyono

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Master of International Studies

**Graduate School of International Studies
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Abstract

After a free trade agreement (FTA) is established and enters into force it is important to find out its effect. The actual impact of an FTA may be different from expectation. This study aims to identify the impact the Agreement between the Republic of Indonesia and Japan for an Economic Partnership, so called the Indonesia-Japan Economic Partnership Agreement (IJEPA) to both countries, Indonesia and Japan.

This study presents an ex-post evaluation to assess the economic impact of IJEPA on trade and welfare. The study focuses on the economic effects of preferences on trade. This study uses quantitative methods of Free Trade Agreement Trade Indicator. Statistics data is collected mainly from The United Nations Commodity Trade Statistics Database (UN Comtrade) and from other sources.

This study shows that Quantitative analysis on trade creation and trade diversion to the trade statistics shows that IJEPA did not create trade diversion which indicates no effect on economic welfare. Meanwhile analysis on trade volumes and terms of trade (observed values) indicates that IJEPA give positive impact on economic welfare to both countries, Indonesia and Japan. But when the trade volumes and terms of trade was analyzed using extrapolated values with pre-IJEPA growth rate the results indicate that IJEPA give negative impact of both countries economic welfare.

Keywords: *IJEPA, trade volume, terms of trade, economic welfare*

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1. INTRODUCTION

Indonesia and Japan signed the Agreement between the Republic of Indonesia and Japan for an Economic Partnership (IJEPA) on August 20, 2007. However it took about a year until the agreement come to effect. IJEPA enter into force on 1 July 2008.

The establishment of this agreement is aimed to enhance bilateral relationship between Indonesia and Japan, by forging mutually beneficial economic partnership through, inter alia, cooperation, trade and investment facilitation, and trade liberalization¹.

The economic partnership is to provide a useful framework for enhanced cooperation and serve the common interests of both countries in various fields and lead to the improvement of economic efficiency and the development of trade, investment and human resources. Both countries believe the partnership would create larger and new market, and enhance the competitiveness, attractiveness and vibrancy of their markets².

To Indonesia IJEPA is the country's first bilateral free trade agreement³. Therefore, as its first experience on having FTA Indonesia does not want to fail in doing IJEPA. Amid several views that the agreement is out of balance⁴, Indonesia hopes to gain maximum benefit from IJEPA⁵.

¹ Agreement between Japan and Republic of Indonesia for an Economic Partnership. 2007.

² *Ibid*

³Japan refers to its free trade agreements (FTAs) as economic partnership agreements (EPAs) ostensibly aimed to achieve a cohesive and holistic partnership transcending mere trade issues.

⁴ At the time around the negotiation of this agreement there was a suspicion in the Indonesian media that Japan got the better deal in the IJEPA. Indeed, some Indonesian analysts contend that Japanese firms will derive more benefits from the IJEPA than their Indonesian counterparts, despite the focus on capacity- building Utama Kajo, chairman of the public policy committee at the Indonesian Chamber of Commerce and Industry (KADIN) has argued that Japan is supporting industries back home while eating out on the Indonesian market. We will likely become more dependent on Japan to the detriment of local industry. Meanwhile, Industry Minister Fahmi Idris at that time has also hinted that Japan might benefit more from the deal as its high-tech products will now command lower import taxes but Indonesia's leading exports, such as agricultural products and timber, will still face powerful non-tariff barriers in the form of strict quality standards. (Andi Haswidi, 'Indonesia likely to be the loser in Japan agreement,' Jakarta Post, 18 August 2007)

⁵However, Indonesian Trade Minister Mari Elka Pangestu at that time has argued that, "We should not worry too much about the flooding of Japanese goods in our market because goods from Japan will be more expensive than local products." (Antara, 'Japan to cut import duties on 80 pct tariff posts for Indonesia,' 27 June 2008).

As IJEPA in effect since 2008, however, since 2013 there is a growing concern in Indonesia that IJEPA had failed to benefit both parties⁶ equally. This has resulted a request from Indonesia to Japan for renegotiation of the agreement⁷.

This study tries to find out the impact of tariff liberalization committed in IJEPA. Primary feature of a trade agreement is liberalization: commitments to reduce/remove import tariff for partner countries while continue to normal tariff from non partner countries. The focus of this research is on the economic effects of preferences on trade because they are the core of any FTA. In general, the research tries to answer the following questions:

- (i) Has the IJEPA affected a member country's trade?
- (ii) Have the IJEPA's trade effects raised a member country's welfare?

This study can be used to conduct a review of the effectiveness of government policy in the sector of trade in goods within the framework of IJEPA, particularly in terms of the effects on Indonesia and Japan on terms of trade and welfare. The impact of the trade agreements can become an input to further study for an in-depth consideration on the continuity of this bilateral agreement.

⁶A number of Indonesian economic analysts called for the review of the partnership arguing that it was more beneficial for Japanese companies, saying that the capacity building and transfer of technology, as promised by Japan under the agreement, had not worked as expected. Even the Industry Minister MS Hidayat also shared the analysts' concerns, saying the transfer of technology promised by Japan had failed to materialize as planned. "The fact that the growth rate exports to Japan lagged behind its imports also indicated that Indonesia received little benefit from the partnership agreement," he said. "All the cooperation agreements that failed to bring any benefit to us should be reviewed," Hidayat said, adding that the IJ-EPA evaluation would be carried out this year. (Hendarsyah Tarmizi and Linda Yulisman, The Ja.karta Post, 09 October 2013)

⁷Following a meeting between Indonesia and Japan a decision to renegotiate the partnership agreements was reached during a bilateral meeting held on the sidelines of the APEC Summit, October 2013. A joint economic cooperation team would first evaluate the implementation of IJEPA. The results of the evaluation would become the basis for the renegotiations (Hendarsyah Tarmizi and Linda Yulisman, "RI, Japan agree to renegotiate economic partnership deals", The Jakarta Post, 09 October, 2013)

2. LITERATURE REVIEW

2.1. Overview of Bilateral Trade Between Indonesia - Japan

Figure: 2.1.

EXPORT DESTINATION OF INDONESIA FOR INDUSTRIAL PRODUCTS

(value: thousand US\$)

| No. | Negara | 2007 | 2008 | 2009 | 2010 | 2011 | Trend |
|-----|---------------|----------------|----------------|---------------|----------------|----------------|--------|
| 1 | United States | 10.360.698.927 | 11.398.595.162 | 9.377.063.502 | 12.188.787.122 | 14.479.975.202 | 7,64% |
| 2 | Japan | 9.655.870.228 | 9.352.503.433 | 7.034.537.989 | 10.020.127.349 | 12.577.409.967 | 6,16% |
| 3 | Singapore | 8.681.643.611 | 9.726.974.197 | 7.594.369.632 | 9.095.966.266 | 10.717.964.544 | 3,61% |
| 4 | China | 5.487.688.681 | 6.245.179.523 | 6.002.223.039 | 8.046.780.413 | 10.877.243.780 | 17,61% |
| 5 | India | 3.416.027.830 | 5.437.216.508 | 4.639.704.813 | 6.331.123.790 | 7.426.973.630 | 18,60% |
| 6 | Malaysia | 3.843.657.052 | 4.819.531.656 | 4.318.161.359 | 5.981.207.888 | 7.063.495.112 | 15,41% |
| 7 | Netherland | 2.646.191.602 | 3.603.926.417 | 2.636.784.879 | 3.375.662.049 | 4.736.755.397 | 11,62% |
| 8 | Thailand | 2.216.431.237 | 2.542.123.467 | 1.973.942.096 | 3.249.159.611 | 4.220.699.350 | 16,57% |
| 9 | South Korea | 2.148.050.374 | 2.714.165.705 | 2.244.623.243 | 3.168.599.856 | 3.719.593.368 | 13,35% |
| 10 | Germany | 2.106.780.620 | 2.239.892.926 | 2.061.184.835 | 2.564.850.913 | 2.996.874.091 | 8,77% |

source: Ministry of Industry Indonesia

Japan is Indonesia major trading partner. Japan is the second largest export destination after the United States for industrial products. In 2011 the total Indonesian exports for industrial products to Japan worth US \$ 12,577 million, a 26% increase from total exports in 2010 amounted to US \$ 2,557 million.

Figure: 2.2.

IMPORT ORIGIN OF INDONESIA FOR INDUSTRIAL PRODUCTS

(Value: thousand US\$)

| No. | Country | 2007 | 2008 | 2009 | 2010 | 2011 | Trend |
|-----|---------------|---------------|----------------|----------------|----------------|----------------|--------|
| 1 | China | 7.306.262.880 | 14.176.571.155 | 12.739.070.057 | 18.722.124.134 | 24.333.313.948 | 30,79% |
| 2 | Japan | 6.447.447.201 | 14.754.153.355 | 9.759.801.103 | 16.842.531.731 | 19.233.696.123 | 26,09% |
| 3 | Singapore | 3.866.056.782 | 11.002.991.250 | 9.203.462.323 | 10.005.939.924 | 10.495.257.685 | 20,95% |
| 4 | United States | 3.597.785.719 | 5.998.872.871 | 5.928.429.531 | 7.898.873.689 | 8.391.843.959 | 21,76% |
| 5 | Thailand | 3.999.023.773 | 6.050.944.272 | 4.333.927.884 | 7.221.136.816 | 9.936.536.489 | 22,11% |
| 6 | South Korea | 1.987.419.590 | 4.774.530.856 | 3.791.564.805 | 5.579.318.602 | 7.424.084.805 | 32,20% |
| 7 | Malaysia | 2.112.477.723 | 3.849.366.797 | 3.088.906.091 | 4.380.103.587 | 5.508.756.224 | 22,70% |
| 8 | Germany | 1.947.866.467 | 3.019.294.359 | 2.337.177.573 | 2.951.354.453 | 3.332.521.229 | 11,08% |
| 9 | Taiwan | 1.429.749.661 | 2.697.284.020 | 1.992.078.760 | 2.929.860.486 | 3.824.344.997 | 22,76% |
| 10 | Australia | 2.096.160.921 | 2.662.900.804 | 2.035.963.183 | 2.435.375.554 | 3.065.736.160 | 6,94% |

source: Ministry of Industry Indonesia

For Indonesia, Japan is the second largest import origin for industrial product after China. In 2011 the total import of Indonesia from Japan worth US \$ 19,233 million, threefold increase from the value of imports in 2007 amounted to US \$ 12,786 million.

Figure: 2.3.

| INDONESIA-JAPAN TRADE BALANCE | | | | | | | | | |
|--------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------|---------------------|--------------------|------------------------|
| Period: 2010 - 2015 | | | | | | | | | |
| (Value : Thousand US\$) | | | | | | | | | |
| Description | 2010 | 2011 | 2012 | 2013 | 2014 | Trend(%) 2010-2014 | Jan-Mar | | Change(%) 2015/2014 |
| | | | | | | | 2014 | 2015 | |
| TOTAL TRADE | 42.747.614,4 | 53.151.308,4 | 52.902.939,3 | 46.370.847,0 | 40.173.241,3 | -2,57 | 10.384.657,3 | 8.975.660,4 | -13,57 |
| OIL & GAS | 9.340.437,1 | 15.500.215,3 | 12.950.231,3 | 11.232.603,0 | 8.669.314,9 | -4,60 | 2.580.790,6 | 1.822.359,8 | -29,39 |
| NON OIL & GAS | 33.407.177,4 | 37.651.093,1 | 39.952.708,0 | 35.138.243,9 | 31.503.926,4 | -1,85 | 7.803.866,7 | 7.153.300,6 | -8,34 |
| EXPORT | 25.781.813,6 | 33.714.696,1 | 30.135.107,7 | 27.086.258,8 | 23.165.662,5 | -4,24 | 6.135.922,8 | 5.254.963,7 | -14,36 |
| OIL & GAS | 9.285.336,4 | 15.384.580,2 | 12.903.869,0 | 11.002.116,4 | 8.599.919,4 | -4,77 | 2.564.230,2 | 1.811.205,4 | -29,37 |
| NON OIL & GAS | 16.496.477,3 | 18.330.116,0 | 17.231.238,7 | 16.084.142,3 | 14.565.743,1 | -3,73 | 3.571.692,6 | 3.443.758,4 | -3,58 |
| IMPORT | 16.965.800,8 | 19.436.612,2 | 22.767.831,7 | 19.284.588,2 | 17.007.578,8 | -0,03 | 4.248.734,5 | 3.720.696,7 | -12,43 |
| OIL & GAS | 55.100,7 | 115.635,1 | 46.362,4 | 230.486,6 | 69.395,6 | 12,20 | 16.560,4 | 11.154,4 | -32,64 |
| NON OIL & GAS | 16.910.700,1 | 19.320.977,2 | 22.721.469,3 | 19.054.101,6 | 16.938.183,3 | -0,11 | 4.232.174,1 | 3.709.542,3 | -12,35 |
| BALANCE OF TRADE | 8.816.012,9 | 14.278.083,9 | 7.367.276,0 | 7.801.670,5 | 6.158.083,7 | -12,38 | 1.887.188,3 | 1.534.267,0 | -18,70 |
| OIL & GAS | 9.230.235,7 | 15.268.945,1 | 12.857.506,6 | 10.771.629,8 | 8.530.523,8 | -4,94 | 2.547.669,9 | 1.800.051,0 | -29,35 |
| NON OIL & GAS | -414.222,8 | -990.861,2 | -5.490.230,6 | -2.969.959,3 | -2.372.440,2 | 58,22 | -660.481,5 | -265.783,9 | 59,76 |

Source: BPS, Processed by Trade Data and Information Center, Ministry of Trade

Bilateral trade in between Indonesia and Japan increased from US\$ 42,747 million in 2010 to US\$ 53,151 million in 2011, but decrease to US\$ 40.173 in 2014. Significant decrease occurs in Indonesia's exports of non-oil sector from US\$ 18,330 million in 2011 to US\$ 14,565 million in 2014. Indonesia's surplus on its trade balance continues decreasing from US \$14,278 million in 2011 to only US\$ 6,158 million.

2.2. IJEPA

IJEPA is a bilateral trade agreement between Indonesia and Japan aimed to enhance bilateral relationship between Indonesia and Japan, by forging mutually beneficial economic partnership through, inter alia, cooperation, trade and investment facilitation, and trade liberalization.

IJ-EPA consists of thirteen comprehensive issues, namely

1. Trade in Goods,
2. Trade in Services,
3. Rules of Origin (ROO),
4. Investment,
5. Improvement of Business Confidence,
6. Movement of Natural Persons,
7. Energy and Mineral Resources,
8. Customs Procedures,
9. Intellectual Property Rights,
10. Competition Policy,
11. Technical Cooperation and Capacity Building,
12. General Provisions, and
13. Government Procurement.

IJ-EPA covers three main pillars:

- a. Liberalization: reduction or removal of border and behind the border obstacles to trade (simplified licensing and business regulations);
- b. Facilitation: improved cooperation & transparency in various areas: customs procedures, competition policy, IPR, etc.;

- c. Cooperation: a distinctive feature of the EPA is that Japan and Indonesia have agreed to cooperate in many areas beyond just trade and that Japan will commit substantial resources to capacity-building activities for Indonesia.

In term of trade liberalization Indonesia is committed to eliminating about 93% of its 11,163 tariffs on Japanese goods, with 58% of these cut immediately upon implementation. Japan, for its part, will cut more than 90% of its 9,275 tariffs on Indonesian products, with 80% of these having disappeared with implementation on July 1 2008. These cover all of Indonesia's main exports such as textiles, footwear, plywood, tropical fruits and fishery products, as well as the almost complete elimination of tariffs on its industrial products.

Tariff reduction schedule is divided into several product categories. A special category is for the products included in the User Specific Duty Free Scheme (USDFS) scheme. USDFS is an accelerated facilitation for Japanese product exported to Indonesia categorized as driver sectors, namely the automotive sector, electronics, heavy equipment, and energy generation, which are exported to Indonesia to be used as raw material. The products must be those which has not been produced / not feasible economically to be produced in Indonesia.

In terms of cooperation, Japan provides technical assistance to Indonesia in various form activities intended to improve the quality and competitiveness of Indonesian products to be able to pass the limits of tolerance of non-tariff barriers in Japan. This is based on the fact that at the time of the establishment of the agreement the competitiveness of Indonesian products to the Japanese market is still relatively low. The activities are focused on the development of the manufacturing industry or called Manufacturing Industry Development Center (MIDEC). MIDEC serves as a driving force for the development of the capacity of industry (industrial capacity building) in order to improve the competitiveness of Indonesian products which covers thirteen sectors, namely metal working, welding, mold & dies, energy conservation, export and investment promotion, SME's, automotives, electric / electronics, steel / steel products, textile, petrochemical and oleo chemicals, nonferrous, and food & beverages.

3. METHODOLOGY

This study uses trade statistics to analyze the trade effects of IJEPA and make inference about economic welfare. IJEPA is a commercial arrangement intended to affect trade. The effects on trade are an important indicator of welfare effects of IJEPA.

3.1. Quantitative Analysis of Trade Creation and Trade Diversion

Trade statistics is analyzed quantitatively using a set of criteria provided by Plummer (2010) who developed it by using Viner's⁸ analysis of FTA. For this qualitative evaluation of an FTA's trade effects, trade and production levels before and after an FTA's implementation will be compared using the following criteria:

- i. An increase in imports from FTA partners accompanied by a drop in domestic production indicates trade creation.
- ii. An increase in imports from FTA partners accompanied by a drop in imports from non-FTA partners indicates trade diversion.
- iii. A rise in total imports where imports from non-FTA partners are constant or increasing implies that there is no trade diversion, thus indicating a positive welfare effect.
- iv. A rise in total imports where imports from non-FTA partners and domestic production decrease and
 - a. the fall in imports from non-FTA partners is larger than the fall in domestic production, implying that trade diversion exceeds trade creation, thus indicating a negative welfare effect; or

⁸ Viner's analysis of FTAs provides a conceptual framework for studying the trade effects of an FTA (Viner 1950). The key concepts in his model are trade creation and trade diversion. Trade creation is the displacement of less efficient national production in favor of more efficient partner-country production. It means that a free trade area diverts trade, away from a more efficient supplier outside the FTA, towards a less efficient supplier within the FTA. Trade diversion is the displacement of more efficient non-partner imports in favor of less efficient partner-country sourced imports. It means that a free trade area creates trade that would not have existed otherwise. As a result, supply occurs from a more efficient producer of the product. According to Viner's model, a regional trading agreement is beneficial (harmful) if the magnitude of trade creation—when preferential tariffs replace inefficient home production with efficient imports from an FTA partner—is larger (smaller) than trade diversion—when preferential tariffs replace efficient imports from the rest of the world with inefficient imports from an FTA partner. Therefore, it is important to focus on changes in domestic production and intra- and extraregional trade. (Plummer, 2010)

- b. the fall in imports from non-FTA partners is smaller than the fall in domestic production, implying that trade creation exceeds trade diversion, thus indicating a positive welfare effect.
- v. A drop in total imports indicates a negative welfare effect.

This method is descriptive and does not quantify the FTA's trade or welfare effects. This analysis assumes that any changes in trade and production are caused by FTA.

3.2. Quantitative Indicators of Trade and Welfare Effects

The previous method does not quantify either the FTA's trade effects or its welfare effects. Therefore the magnitudes of these effects remain unknown. According to Lloyd and Maclaren (2004), the economic welfare of a member country depends on changes in three key indicators:

1. trade volume,
2. intra-union terms of trade, and
3. extra-union terms of trade.

The three components are all positively related to the member country's welfare. It means that if a member country's trade volumes increase or its terms of trade improve as a result of the FTA, then its economic welfare will have risen.

Trade statistics is analyzed to find the change in trade volume and the change in terms of trade using two methods: observed values and extrapolated values with Pre-FTA growth rate as introduced by Plummer (2010)

3.2.1. Trade Volumes and Terms of Trade: Observed Values

Change in trade volume is quantified using the following formula adapted by Plummer (2010) from Lloyd and Maclaren welfare measure,:

$$\text{Change in Trade Volume} = \sum_p t_{mp} u_{mp}^0 (m_p^1 - m_p^0)$$

where

p indicates a partner country

t_{mp} is the import-weighted ad valorem tariff on imports from partner country p in the base period

u_{mp}^0 is the unit value of imports from partner country p in the base period

m_p^1 is the quantity of imports from partner country p in the new period

m_p^0 is the quantity of imports from partner country p in the base period

The value of the change indicates the welfare. If it is positive, it indicates that economic welfare rose because of expanded trade volumes, and vice versa.

Analysis is completed with the calculation of the change in terms of trade by using the following formula adapted by Plummer (2010) from Lloyd and Maclaren welfare measure:

$$\text{Change in Terms of Trade} = \sum_p x_p^0 (u_{xp}^1 - u_{xp}^0) - \sum_p m_p^0 (u_{mp}^1 - u_{mp}^0)$$

where

p indicates a partner country

x_p^0 is the quantity of exports to partner country p in the base period

u_{xp}^1 is the unit value of exports to partner country p in the new period

u_{xp}^0 is the unit value of exports to partner country p in the base period

m_p^0 is the quantity of imports from partner country p in the base period

u_{mp}^1 is the unit value of imports from partner country p in the new period

u_{mp}^0 is the unit value of imports from partner country p in the base period

Overall gain in welfare was approximately the sum of the change in trade volume and the change in terms of trade.

This approach does not address the problem whether or not these effects were actually caused by the FTA. It assumes that the changes in trade after the FTA are driven solely by FTA.

3.2.2. Trade Volumes and Terms of Trade: Extrapolated Values with Pre-Free Trade Agreement Growth Rates

In order to isolate the effects of the FTA a counterfactual, which is a hypothetical estimate of what trade would have been in without the FTA, is constructed. The FTA's trade effects then be quantitatively assessed by comparing actual values with the counterfactual. This constructed counterfactual is simple but imperfect. It allows trade in the post-FTA period to evolve according to pre-FTA trends. The underlying assumption is that the impact of other factors besides the FTA on the trend in trade flows would be the same with or without the FTA.

More specifically, the geometric mean of annual growth in the pre-FTA period is defined and uses this growth rate to obtain numeric estimates of the counterfactual after FTA in effect. The difference between the actual and extrapolated values is an estimate of the FTA effect.

To quantify the trade volume effect on welfare, the following formula, adapted by Plummer (2010) from Lloyd and Maclaren welfare measure, is used:

$$\text{Change in Trade Volume} = \sum_p t_{mp} u_{mp}^E (m_p^1 - m_p^E)$$

where

p indicates a partner country

t_{mp} is the import-weighted ad valorem tariff on imports from partner country p in the base period

u_{mp}^E is the extrapolated unit value of imports from partner country p in the new period

m_p^1 is the actual quantity of imports from partner country p in the new period

m_p^E is the extrapolated quantity of imports from partner country p in the new period

To quantify the terms of trade effect, the following formula, adapted by Plummer (2010) from Lloyd and Maclaren welfare measure, is used.

$$\text{Change in Terms of Trade} = \sum_p x_p^E (u_{xp}^1 - u_{xp}^E) - \sum_p m_p^E (u_{mp}^1 - u_{mp}^E)$$

where

p indicates a partner country

x_p^E is the extrapolated quantity of exports to partner country p in the new period

u_{xp}^1 is the unit value of exports to partner country p in the new period

u_{xp}^E is the extrapolated unit value of exports to partner country p in the new period

m_p^E is the extrapolated quantity of imports from partner country p in the new period

u_{mp}^1 is the unit value of imports from partner country p in the new period

u_{mp}^E is the extrapolated unit value of imports from partner country p in the new period

3.3. Data Source

This research collects secondary data of annual trade value (export and import) of Indonesia and Japan from the United Nations Commodity Trade Statistics Database (UN Comtrade), while data on applied import tariff is collected from the United Nations Conference on trade and Development's TRAINS (Trade Analysis And Information System) database via WITS (World Integrated Solutions). The trade quantity data (volume) is collected from Industrial Data Center (Pusdatin) Ministry of Industry of Indonesia.

For quantitative analysis of trade creation and trade diversion in this study the Malaysia, Singapore, Thailand, Vietnam and Philippines are chosen as trade partner to Japan for comparison to Indonesia. While the China and Korea are chosen as trade partner to Indonesia for comparison to Japan.

This study analyze chemicals and related products (Standard International Trade Classification (SITC) 5, rev 2), manufactured goods and machinery (Standard International Trade Classification (SITC) 6, rev 2) and transport equipment Standard International Trade Classification (SITC) 7, rev 2).

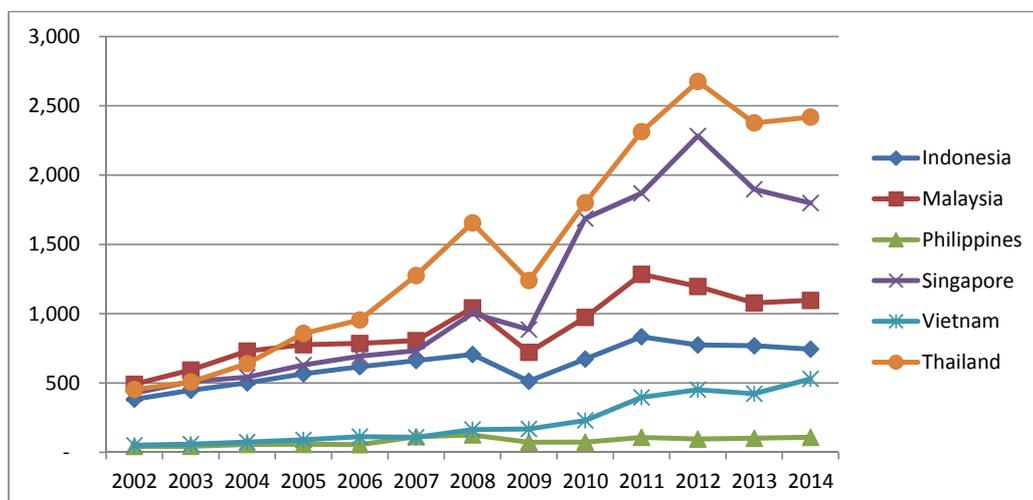
4. EMPIRICAL RESULTS

4.1. Qualitative Analysis of Trade Creation and Trade Diversion

For this analysis the impact of IJEPA is analyzed on Indonesia and Japan's trade of chemicals and related products (Standard International Trade Classification (SITC) of All Economic activities 5, rev 2), manufactured goods and machinery (Standard International Trade Classification (SITC) of All Economic activities 6, rev 2) and transport equipment (Standard International Trade Classification (SITC) of All Economic activities 7, rev 2) by comparing the trade before and after IJEPA is implemented using criteria as suggested by Plummer. For Japan the effect is analyzed by comparing its import from Indonesia and selected ASEAN countries. While for Indonesia the effect is analyzed by comparing its import from Japan and China and Korea.

Japan

Figure: 4.1.1.
Japanese imports of chemicals and related products from selected ASEAN countries, 2002-2014 (\$ million)

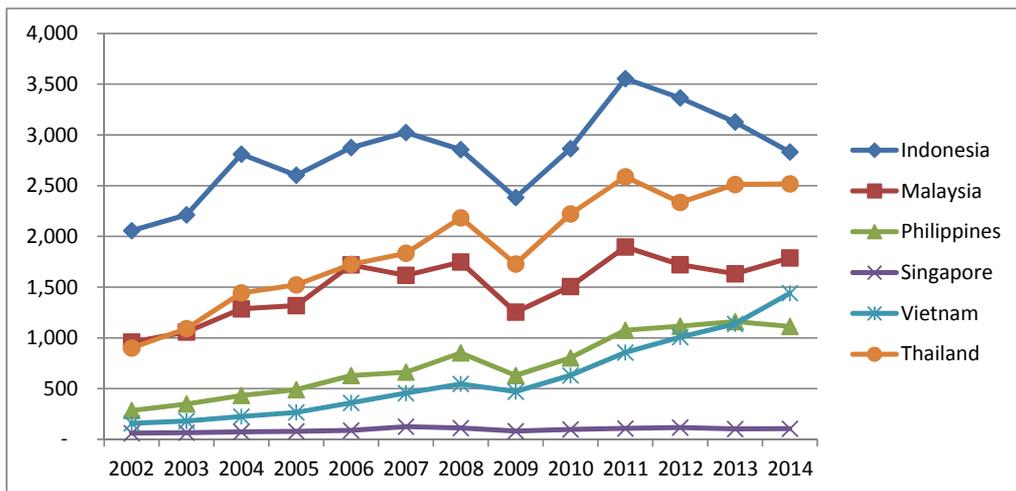


Note: values are based on the Standard International Trade Classification (SITC) of All Economic activities 5, rev 2.
Source: UNcomtrade, author's calculation

Figure 4.1.1. shows the trend of Japanese import of chemical and related product from Indonesia and Malaysia, Philippines, Singapore, Vietnam and Thailand. Japanese import from Indonesia is relatively stable from 2002-2007, and there is no significant increase even

after IJEPA is implemented in 2008. The east asian financial may be the possible reason for the fall of import from 2008 to 2009. From 2009 until 2011, Japan import from Malaysia, Singapore and Thailand followed a sharp increased more than its import from Indonesia. This is quite surprising since IJEPA is expected for a trade diversion to Indonesia. Japan import from Indonesia should have been increased due to the reduced import tariff, which made Indonesian goods become more competitive. Therefore, the implementation of IJEPA may have not affected Japanese import from Indonesia in this sector.

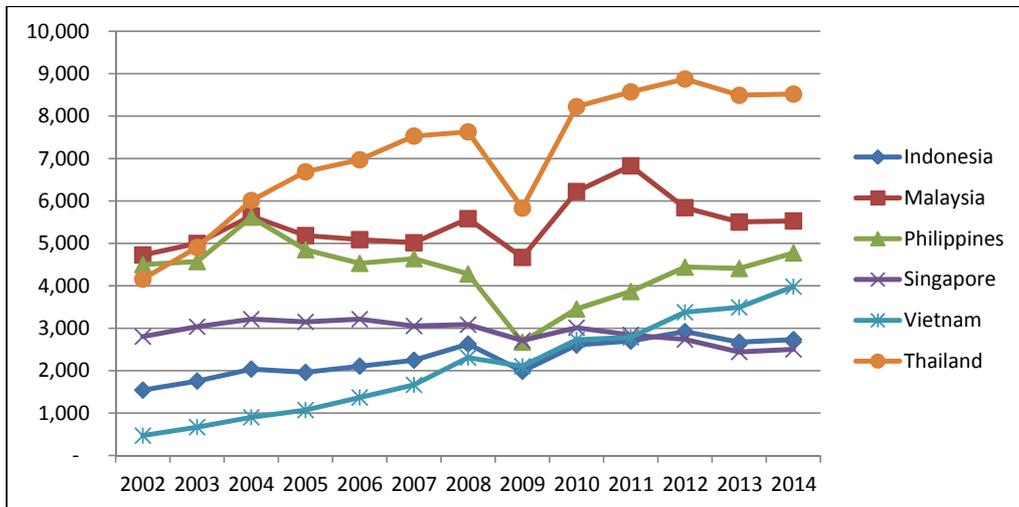
Figure: 4.1.2
Japanese imports of manufactured goods from selected ASEAN countries,
2002-2014 (\$ million)



Note: values are based on the Standard International Trade Classification (SITC) of All Economic activities 6, rev 2.
 Source: UN comtrade, author's calculation

The implementation of IJEPA on 2008 did not have much impact on Japanese imports on machinery and transport equipment from Indonesia. As shown by Figure 4.1.2 the rise on import from Indonesia on 2009 - 2011 was followed by import from the other country like Thailand, Malaysia, Philippines and Vietnam. Japanese import from Indonesia followed a significant fall from 2011 to 2014. This suggests that there was no trade diversion to Indonesia in this sector. Tariff reduction in this sector did not strong enough to increase the competitiveness of Indonesian manufactures goods in Japanese market. Probably this is because Japan apply high standard which cannot met by Indonesia manufactured goods.

Figure: 4.1.3
Japanese imports of machinery and transport equipment from selected ASEAN countries, 2002-2014 (\$ million)

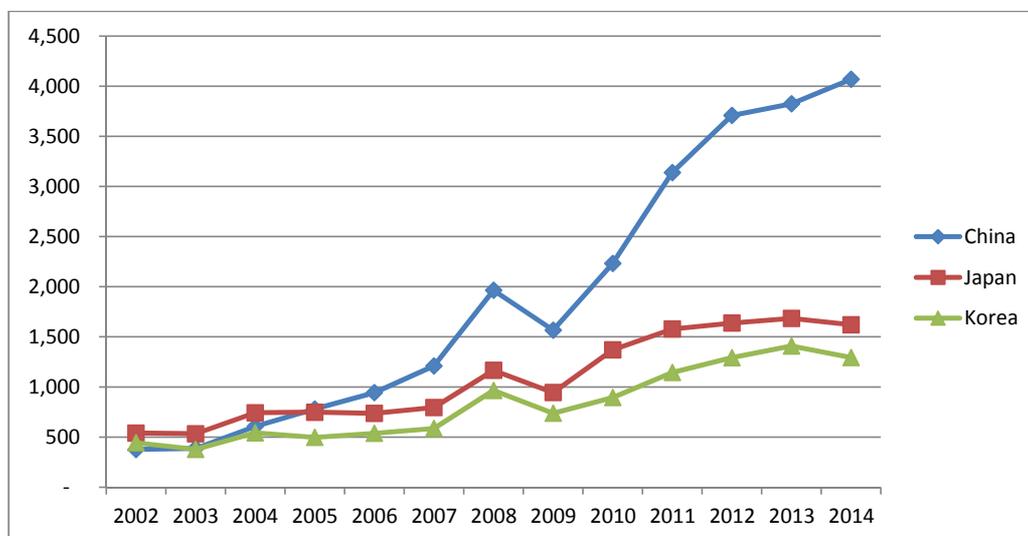


Note: values are based on the Standard International Trade Classification (SITC) of All Economic activities 7, rev 2.
 Source: UN comtrade, author's calculation

In machinery and transportation equipment sector IJEPA did not show a good impact. The figure 4.1.3 shows that Japanese trend import from Indonesia did not change much. Even from 2012 to 2014 Japanese import in this sector tends to fall. While imports from Thailand, Malaysia, Philippines and Vietnam increased quite high during 2009-2011 import increase from Indonesia was the lowest. This suggests that there is no trade diversion. Surprisingly Japanese imports in this sector from Vietnam keep increasing since 2002 until 2014 amid the unstable growth of import from other countries. Probably this is because many Japanese companies in this sector have invested in Vietnam. During this time IJEPA failed to increase Japanese import in machinery and transport equipment product from Indonesia.

Indonesia

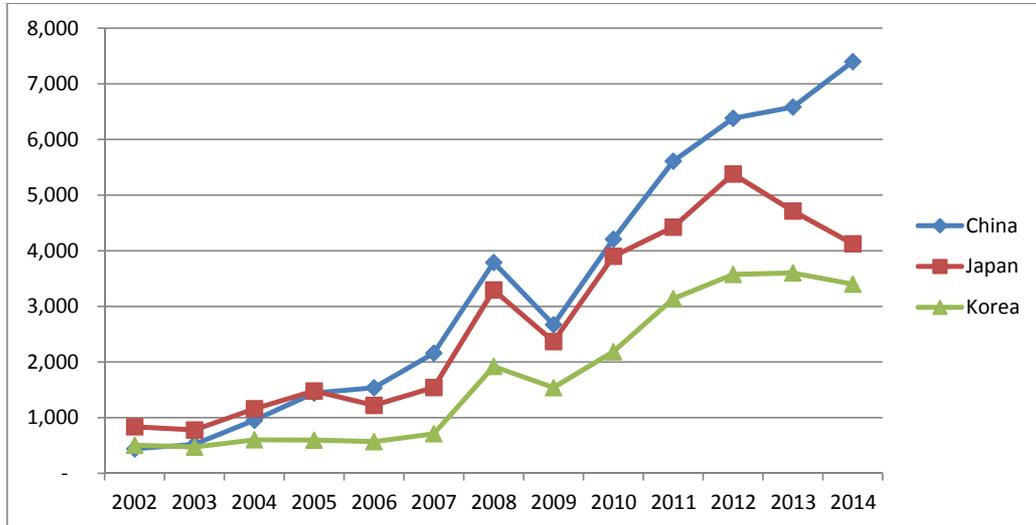
Figure: 4.1.4
Indonesian imports of chemicals and related products from China, Japan and Korea, 2002-2014 (\$ million)



Note: values are based on the Standard International Trade Classification (SITC) of All Economic activities 5, rev 2.
Source: UN comtrade, author's calculation

Import trend from Japan on chemical and related product followed a promising increase in 2009-2010 until slowed down in 2013. Although the trend was increasing but as shown in Figure 4.1.4. Indonesian imports from Korea also increasing in almost the same level. While import trend from China was the highest among these 3 countries. Even when import from Japan and Korea drop in 2014, import trend from China keep increasing. This suggests that implementation of IJEPA since 2008 may not have impact on diverting import of machinery and transport equipment goods from Korea and China to Japan. Tariff reduction should have made Japanese product become cheaper which in turn should have increase the volume of import in this sector from Japan, compared to import from the other countries.

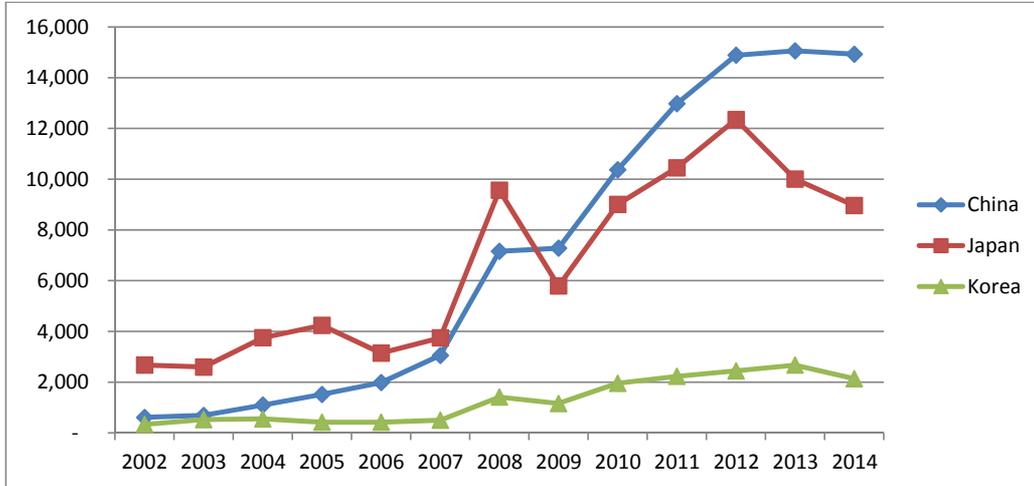
Figure: 4.1.5
Indonesian imports of manufactured goods from China, Japan and Korea, 2002-2014
 (\$ million)



Note: values are based on the Standard International Trade Classification (SITC) of All Economic activities 6, rev 2.
 Source: UN comtrade, author's calculation

Similar situation occurred in Indonesian import on manufactured goods from Japan. Even though the imports trend in manufactured goods from Japan from 2009- 2012 increased higher compared to imports trend before IJEPA came into effect, Figure 4.1.5. shows that the same thing also happened in imports from China and Korea. Even worse, while imports from Japan followed a sharp decrease since 2012 while import from China was rising. This suggests that IJEPA may not have impact for a trade diversion from China and Korea to Japan. Probably this is because of the increase of Japanese investment in Indonesia in this sector. By having Japanese companies producing goods in this sector operate in Indonesia automatically Indonesia's import from Japan decline because those product have been produced domestically.

Figure: 4.1.6
Indonesian imports of machinery and transport equipment from China, Japan and Korea, 2002-2014 (\$ million)



Note: values are based on the Standard International Trade Classification (SITC) of All Economic activities 7, rev 2.
 Source: UN comtrade, author's calculation

Figure 4.1.6. shows that Indonesian import of machinery and transport equipment goods from Japan increased very sharp, more than double increase in 2008 from 2007. The trend of import increase of machinery and transport equipment goods from Japan was relatively higher than that of Korea, but the figure also shows that import increase trend from China was even higher than that from Japan and Korea. And when imports from Japan was decreasing very sharp since 2012 the decrease from China and Korea was not that sharp. This suggest that IJEPA may not have impact on diverting trade from China and Korea to Japan for importation of machinery and transport equipment goods. Most likely this is because Chinese product in this sector is the most competitive among these three countries. This is understandable since Chinese efficiency in producing goods has been increase dramatically in the recent years which made Chinese products become very cheap.

4.2. Quantitative Indicator of Trade and Welfare Effects

Trade Volume and Terms of Trade : Observed Values

Changes in trade volumes and terms of trade is computed using trade data between 2007 and 2013 which is 6 years after the IJEPA was implemented. The sum of bilateral changes in trade volumes should be weighted in a base period. In this study 2007 is used as base period and 2013 as the new period.

Japan

Figure: 4.2.1

Japanese Trade Values, Quantities, Unit Values, Import Tariffs, and Change in Trade Volume with Indonesia, 2007 and 2013

| SITC Rev 2 | Commodity | 2007 | | | | 2013 | | | Change in trade volume (\$'000) |
|------------|---|--------------------------|------------------------------|---------------------------------|--------------------------------|--------------------------|------------------------------|---------------------------------|---------------------------------|
| | | Import Quantity (\$'000) | Import Quantity ('000 kilos) | Import Unit Value (\$ per kilo) | Import weight applied tariff % | Import Quantity (\$'000) | Import Quantity ('000 kilos) | Import Unit Value (\$ per kilo) | |
| 5 | Chemicals and related products, n.e.s. | 566,312 | 705,096 | 0.80 | 3.41 | 759,563 | 572,219 | 1.33 | 529,278 |
| 6 | Manufactured goods classified chiefly by material | 3,019,411 | 1,736,668 | 1.74 | 2.93 | 2,930,078 | 1,813,533 | 1.62 | (455,081) |
| 7 | Machinery and transport equipment | 2,013,085 | 196,510 | 10.24 | 0.46 | 2,563,402 | 188,145 | 13.62 | 2,593,271 |

Note: The data on applied import tariff was obtained from United Nations Conference on Trade and Development's TRAINS (Trade Analysis and information system) database via WITS (World Integrated Trade Solutions) available online. Source: Author's calculations with data sourced from UNComtrade and Ministry of Industry of Indonesia.

The calculation, using the formula for change in trade volume as suggested by Plummer, as shown in Figure 4.2.1 indicate that the change in trade volume for Japanese chemical and related products was \$529.278 million. In machinery and transport equipment the change in trade volume was \$2,598.271 million. In those two sectors the numbers are positive, indicating that economic welfare in this sector rose in part because of expanded trade volume. Trade is expanded in this context may caused by the increased competitiveness of Indonesia product compared to one from other countries in Japanese market. While in manufacturing goods the change in trade volume was negative. It shows that for Japanese the economic welfare in this sector was reduced. Thus the impacts of IJEPA implemented since 2008 are different among this three sectors. In chemical and related product goods and machinery and transport equipment goods IJEPA has positive impact, while in manufactured goods classified by material sector the impact is negative.

Indonesia

Figure: 4.2.2

Indonesian Trade Values, Quantities, Unit Values, Import Tariffs, and Change in Trade Volume with Japan, 2007 and 2013

| SITC Rev 2 | Commodity | 2007 | | | | 2013 | | | Change in trade volume (\$'000) |
|------------|---|--------------------------|------------------------------|---------------------------------|--------------------------------|--------------------------|------------------------------|---------------------------------|---------------------------------|
| | | Import Quantity (\$'000) | Import Quantity ('000 kilos) | Import Unit Value (\$ per kilo) | Import weight applied tariff % | Import Quantity (\$'000) | Import Quantity ('000 kilos) | Import Unit Value (\$ per kilo) | |
| 5 | Chemicals and related products, n.e.s. | 795,534 | 457,888 | 1.74 | 4.5 | 1,683,859 | 630,631 | 2.67 | 4,120,995 |
| 6 | Manufactured goods classified chiefly by material | 1,543,539 | 1,077,419 | 1.43 | 7.0 | 4,713,285 | 2,883,486 | 1.63 | 7,422,729 |
| 7 | Machinery and transport equipment | 3,340,239 | 389,585 | 8.57 | 5.8 | 10,002,927 | 784,485 | 12.75 | 728,395,280 |

Note: The data on applied import tariff was obtained from United Nations Conference on Trade and Development's TRAINS (Trade Analysis and information system) database via WITS (World Integrated Trade Solutions) available online.
Source: Author's calculations with data sourced from UNComtrade and Ministry of Industry of Indonesia.

Figure 4.2.2. shows that Indonesian change in trade volume in these 3 sectors is positive. In chemical and related product sector the change was \$ 4,120.9 million, in manufacturing goods sector the change was \$7,422.7 million, while in machinery and transport equipment the change was \$728,395.2 million. The highest change was in machinery and transport equipment, from \$3,340.2 in 2007 became \$10,002.9 in 2013. This is a significant positive impact of IJEPa for Indonesia. The positive number in all sector indicates that Indonesian economic welfare in the sectors increased.

To complete the analysis the changes in terms of trade is computed using the trade data⁹ and the formula as suggested by Plummer. The result is as shown in Figure 4.2.3.

Figure: 4.2.3
Japan and Indonesia's Change in Terms of Trade, Change in Trade Volume and Overall gain in welfare, 2007 - 2013

| Countries | SITC Rev 2 | Commodity | Change in terms of trade | Change in trade volume | Overall gain in welfare |
|-----------|------------|---|--------------------------|------------------------|-------------------------|
| | | | (\$'000) | (\$'000) | (\$'000) |
| Japan | 5 | Chemicals and related products, n.e.s. | 445,132 | 529,278 | 974,409 |
| | 6 | Manufactured goods classified chiefly by material | 682,955 | (455,081) | 227,874 |
| | 7 | Machinery and transport equipment | 7,147,550 | 2,593,271 | 9,740,820 |
| Indonesia | 5 | Chemicals and related products, n.e.s. | (445,132) | 4,120,995 | 3,675,863 |
| | 6 | Manufactured goods classified chiefly by material | (682,955) | 7,422,729 | 6,739,774 |
| | 7 | Machinery and transport equipment | (7,147,550) | 728,395,280 | 721,247,730 |

Note: Data of change in trade volume is taken from Figure 4.2.1 and 4.2.2. Data of overall gain in welfare is total of the change in terms of trade and the change in trade volume.

Source: Author's calculations with data sourced from UNComtrade and Ministry of Industry of Indonesia.

Figure 4.2.3 shows that in after the implementation of IJEPa in 2008 in those 3 sectors Japan recorded positive change in terms of trade, and, *vice versa*, Indonesia's change in terms of trade was negative, indicating that Japanese economic welfare in those 3 sectors improved, while Indonesian economic welfare was reduced. However when the result is combined with the change in trade volume the number for both countries shows positive, indicating that both countries economic welfare have risen. This result suggest that the implementation of IJEPa have positive impact to Indonesia in raising the economic welfare in these sector, that is in chemical and related products, manufactured good classified chiefly by material and machinery and transport equipment.

⁹ Since this is bilateral trade, thus export and import data is used interchangeably in that Indonesian export is Japanese export *vice versa*

Nonetheless, this approach did not address the problem of whether or not these effects were actually caused by the IJEPA. This method assumed that the changes after the implementation of IJEPA were driven solely by IJEPA.

Trade Volume and Terms of Trade: Extrapolated Values with Pre-IJEPA Growth Rates

A hypothetical estimation of what trade would have been without IJEPA (counterfactual) is constructed. This is to isolate the effect of IJEPA from other factors. The counterfactual allows trade after IJEPA is implemented to evolve according to pre-IJEPA trend. The IJEPA's trade effects then are quantitatively analyzed by comparing actual values, the real trade data, with the counterfactual assuming that the impact of other factor would be the same with or without IJEPA. Geometric mean of annual growth in the pre-IJEPA period is calculated. The growth rate is used to construct numeric estimate of the counterfactual after integration.

Figure: 4.2.4
Geometric Mean Annual Growth Rates of Indonesia-Japan (Bilateral) Trade Quantities and Unit Values, 2001-2007 (%)

| Countries | SITC Rev.2 | Commodity | Import Quantity | Import Unit Value |
|-----------|------------|---|-----------------|-------------------|
| Japan | 5 | Chemicals and related products, n.e.s. | 0.15 | 0.05 |
| | 6 | Manufactured goods classified chiefly by material | 0.06 | 0.14 |
| | 7 | Machinery and transport equipment | 0.06 | (0.02) |
| Indonesia | 5 | Chemicals and related products, n.e.s. | 0.71 | 0.70 |
| | 6 | Manufactured goods classified chiefly by material | 0.76 | 0.69 |
| | 7 | Machinery and transport equipment | 0.70 | 0.63 |

Source: Author's calculations with data sourced from UNComtrade and Ministry of Industry of Indonesia.

IJEPA was implemented since 2008. Therefore trade growth rates prior to 2008 are needed in order to estimate a counterfactual for the years 2008 onwards. The pre-IJEPA (2001-2007) geometric means annual growth rates of Indonesian export quantities and trade unit value to Japan and, vice versa, are shown in Figure. 4.2.4

The extrapolation is calculated by multiply the data with the corresponding geometric mean growth rate over the time period of the extrapolation. The difference between the actual and extrapolated values of each variable is an estimate of the IJEPa effect.

Figure: 4.2.5
Indonesian Actual and Extrapolated Trade Statistic with Japan

| SITC Rev 2 | Commodity | 2007 | | 2013 | | | | | |
|------------|---|-----------------|-------------------|-----------------|---------------|----------------------|-------------------|--------------|----------------------|
| | | Import Quantity | Import Unit Value | Import Quantity | | | Import Unit Value | | |
| | | (\$'000) | (\$ per kilo) | (\$'000) | | | (\$ per kilo) | | |
| | | | | Actual | Extrapolated | Imputed IJEPa effect | Actual | Extrapolated | Imputed IJEPa effect |
| 5 | Chemicals and related products, n.e.s. | 795,533.74 | 1.74 | 1,683,859.03 | 20,030,482.01 | (18,346,622.98) | 2.67 | 42.16 | (39.49) |
| 6 | Manufactured goods classified chiefly by material | 1,543,539.35 | 1.43 | 4,713,285.35 | 46,249,953.85 | (41,536,668.50) | 1.63 | 33.09 | (31.45) |
| 7 | Machinery and transport equipment | 3,340,239.31 | 8.57 | 10,002,926.64 | 79,807,107.59 | (69,804,180.95) | 12.75 | 198.01 | (185.26) |

Source: Author's calculations with data sourced from UNComtrade and Ministry of Industry of Indonesia.

Figure: 4.2.6
Japanese Actual and Extrapolated Trade Statistic with Indonesia

| SITC Rev 2 | Commodity | 2007 | | 2013 | | | | | |
|------------|---|-----------------|-------------------|-----------------|--------------|----------------------|-------------------|--------------|----------------------|
| | | Import Quantity | Import Unit Value | Import Quantity | | | Import Unit Value | | |
| | | (\$'000) | (\$ per kilo) | (\$'000) | | | (\$ per kilo) | | |
| | | | | Actual | Extrapolated | Imputed IJEPa effect | Actual | Extrapolated | Imputed IJEPa effect |
| 5 | Chemicals and related products, n.e.s. | 566,312.32 | 0.80 | 759,563.07 | 1,294,619.26 | (535,056.20) | 1.33 | 1.08 | 0.24 |
| 6 | Manufactured goods classified chiefly by material | 3,019,411.39 | 1.74 | 2,930,077.58 | 4,335,883.26 | (1,405,805.68) | 1.62 | 3.86 | (2.24) |
| 7 | Machinery and transport equipment | 2,013,084.86 | 10.24 | 2,563,401.77 | 2,853,537.41 | (290,135.64) | 13.62 | 8.91 | 4.72 |

Source: Author's calculations with data sourced from UNComtrade and Ministry of Industry of Indonesia.

Figure 4.2.5. and Figure 4.2.6. shows the calculation of the imputed IJEPa effect on Japan and Indonesian export. After 6 years implementation of IJEPa mostly the numbers of IJEPa effect on import quantity are negative. This is surprising since the tariff elimination/reduction under the scheme of IJEPa should have increased the competitiveness of good produced by both countries which in turn should have increase bilateral trade between Indonesia and Japan. This suggest that IJEPa has negative impact on economic welfare for both countries by means the actual result did not meet the expectation in terms of increasing trade volume

between indonesia and Japan. However as a result of IJEPa the Indonesian import price from Japan in chemical those 3 sectors became cheaper.

To quantify the trade volume effect on welfare, change in trade volume is calculated using formula as suggested by Plummer.

Figure: 4.2.7

Japanese Change in Trade Volume with Indonesia, 2007 and 2013

| SITC Rev 2 | Commodity | 2007 | 2013 | | | | Change in Trade Volume (\$'000) |
|------------|---|------------------------------|--------------------------|--------------|---------------------------------|--------------|---------------------------------|
| | | Import weight applied tariff | Import Quantity (\$'000) | | Import Unit Value (\$ per kilo) | | |
| | | | Actual | Extrapolated | Actual | Extrapolated | |
| | | % | | | | | |
| 5 | Chemicals and related products, n.e.s. | 3.41 | 759,563.07 | 1,294,619.26 | 1.33 | 1.08 | (1,977,821) |
| 6 | Manufactured goods classified chiefly by material | 2.93 | 2,930,077.58 | 4,335,883.26 | 1.62 | 3.86 | (15,889,886) |
| 7 | Machinery and transport equipment | 0.46 | 2,563,401.77 | 2,853,537.41 | 13.62 | 8.91 | (1,188,891) |

Source: Author's calculations with data sourced from UNComtrade and Ministry of Industry of Indonesia.

By using extrapolation trade value, the change in trade is negative for Japan as shown in Figure 4.2.7. This negative amount indicates that IJEPa had a negative economic welfare impact on those three sectors in Japan because of lower trade, by means that the actual trade did not meet the expectation. The worst case is in manufactured goods classified chiefly by material, in which trade was expected to be \$4,355.8 million after the implementation of IJEPa, but the actual trade was only \$2,930.0 million.

Figure: 4.2.8

Indonesian Change in Trade Volume with Japan, 2007 and 2013

| SITC Rev 2 | Commodity | 2007 | 2013 | | | | Change in Trade Volume (\$'000) |
|------------|---|------------------------------|--------------------------|---------------|---------------------------------|--------------|---------------------------------|
| | | Import weight applied tariff | Import Quantity (\$'000) | | Import Unit Value (\$ per kilo) | | |
| | | | Actual | Extrapolated | Actual | Extrapolated | |
| | | % | | | | | |
| 5 | Chemicals and related products, n.e.s. | 4.5 | 1,683,859.03 | 20,030,482.01 | 2.67 | 42.16 | (3,496,339,520) |
| 6 | Manufactured goods classified chiefly by material | 7.0 | 4,713,285.35 | 46,249,953.85 | 1.63 | 33.09 | (9,619,885,440) |
| 7 | Machinery and transport equipment | 5.8 | 10,002,926.64 | 79,807,107.59 | 12.75 | 163.72 | (66,514,266,518) |

Source: Author's calculations with data sourced from UNComtrade and Ministry of Industry of Indonesia.

Figure 4.2.8 shows that the change in trade volume is negative, indicate that the implementation of IJEPA have negative impact on Indonesian economic welfare in all 3 sectors. The worst impact possibly on machinery and transport equipment, in which trade was expected to be \$79,807.1 million after the implementation of IJEPA, but the actual trade was only \$10,002.9 million, less than 20 % of the expectation. Probably this is because Japan had invested in Indonesia in this sector massively, which reduce importation in this sector from Japan.

To complete the analysis the changes in terms of trade using extrapolated trade value is computed using the trade data¹⁰ and the formula as suggested by Plummer. The result is as shown in Figure 4.2.9.

Figure: 4.2.9
Japan and Indonesia's Change in Terms of Trade, Change in Trade Volume and Overall gain in welfare, 2007 - 2013

| Countries | SITC Rev 2 | Commodity | Change in terms of trade | Change in trade volume | Overall gain in welfare |
|-----------|------------|---|--------------------------|------------------------|-------------------------|
| | | | (\$'000) | (\$'000) | (\$'000) |
| Japan | 5 | Chemicals and related products, n.e.s. | (791,352,304) | (1,977,821) | (793,330,125) |
| | 6 | Manufactured goods classified chiefly by material | (1,444,891,306) | (15,889,886) | (1,460,781,192) |
| | 7 | Machinery and transport equipment | (12,062,122,071) | (1,188,891) | (12,063,310,962) |
| Indonesia | 5 | Chemicals and related products, n.e.s. | 791,352,304 | (3,496,339,520) | (2,704,987,216) |
| | 6 | Manufactured goods classified chiefly by material | 1,444,891,306 | (9,619,885,440) | (8,174,994,134) |
| | 7 | Machinery and transport equipment | 12,062,122,071 | (66,514,266,518) | (54,452,144,446) |

Note: Data of change in trade volume is taken from Figure 3.2.6 and 3.2.7. Data of overall gain in welfare is total of the change in terms of trade and the change in trade volume.

Source: Author's calculations with data sourced from UNComtrade and Ministry of Industry of Indonesia.

Figure 3.2.9 shows that using extrapolated trade value, Indonesia's change in terms of trade in 2013 was positive; indicating that Indonesian economic welfare in those 3 sectors was raised.

¹⁰ Since this is bilateral trade, thus export and import data is used interchangeably in that Indonesian export is Japanese export *vice versa*

And, *vice versa*, it is negative for Japan. However the overall gain in welfare shows negative for both countries, which indicates that IJEPA did not have positive impact for both countries, meaning that the realization of IJEPA did not meet the expectation in raising the bilateral trade between Indonesia and Japan. The total trade should have increased more than the realization.

5. CONCLUSION

IJEPA as a preferential trade agreement was aimed at enhancing the economic welfare of Indonesia and Japan. The liberalization pillar of this agreement provides market access between the two countries.

In term of trade liberalization Indonesia is committed to eliminating about 93% of its 11,163 tariffs on Japanese goods, while Japan cut more than 90% of its 9,275 tariffs on Indonesian products.

As IJEPA was implemented since 2008 the effect of to economic welfare of Japan and Indonesia is studied using quantitative indicator of trade and welfare effects, in which the changes in trade volumes and changes in the terms of trade serve as the economic welfare indicator with a positive correlation: positive / negative changes indicates rise / fall in economic welfare.

Sectors chosen for the analysis are chemicals and related products (Standard International Trade Classification (SITC) of All Economic activities 5, rev 2), manufactured goods and machinery (Standard International Trade Classification (SITC) of All Economic activities 6, rev 2) and transport equipment Standard International Trade Classification (SITC) of All Economic activities 7, rev 2).

Quantitative analysis on trade creation and trade diversion to the trade statistics shows that IJEPA did not create trade diversion which indicates no effect on economic welfare. Meanwhile analysis on trade volumes and terms of trade (observed values) indicates that IJEPA give positive impact on economic welfare to both countries, Indonesia and Japan. But when the trade volumes and terms of trade was analyzed using extrapolated values with pre-IJEPA growth rate the results indicate that IJEPA give negative impact of both countries economic welfare. This may be because there were over estimation of the counter factual

trend and therefore generated extrapolated values larger than actual values or there were problem in the implementation of IJEPA itself such as requirement for importation using IJEPA scheme was difficult to obtain for importers who want to import using IJEPA preferential tariff.

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