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Let's talk about the Free Trade Agreement (FTA):

The five ASEAN members highlighting Indonesia

Kiki Verico¹ and Yeremia Natanael²

Abstract

This paper attempts to assess the role of FTA (Free Trade Agreement) in enhancing both the trade and investment in both levels of the country and the region. This paper chooses Indonesia as the country and five ASEAN member states (Indonesia, Malaysia, Thailand, Philippines, and Vietnam) as the regional case of study. This paper uses net export & intra-trade and FDI inflows & intra-FDI as the dependent variables for trade and investment respectively. Period of analysis is 25 years from 1992 to 2016. This paper found that FTA utilization is effective to increase trade and investment at both the country and regional level with certain control variables. It found that ASEAN is ready to move from intra-regional trade to intra-regional investment. Therefore, the ASEAN Economic Community is on the right track and in the right time for ASEAN. At the bilateral level, this study proposed that the net export surplus is the aim for the negotiation to the lower income per capita trading partner while FDI inflow from the trading partner is the aim for the higher income one. From non-regression model, this paper found that the role of FTA center is necessary to optimize the utilization of FTA.

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1. Introduction

1.1. Background

Current account (CA) indicates the stability of local currency exchange rate. The latter is important for macroeconomic stability including the stability of merchandise of non-oil & gas export as well as the non-primary export product. Study of the LPEM in 2014 proved that macroeconomic stability is essential for both the manufacturer and service sector companies and this is affected by the Rupiah per USD stability. Export value of primary products such as rubber, palm oil, and mining products depend on the international price of oil & gas as their prices have the positive elasticity to it. The higher international oil & gas price, the higher primary product price. The Terms of Trade (ToT) of primary product export depends on oil & gas international price. Meanwhile, the export price of merchandise product of non-oil & gas depends on the stability of the exchange rate. As this rests on CA, therefore surplus in CA is important to guarantee the stability of the exchange rate.

The Balance of Payment (BoP) data shows that Indonesia's CA depends on the export value of merchandise of non-oil and gas products (**Figure 1**). Empirically, local currency depreciation towards USD has been affected by the expectation in the derivative market of the exchange rate. Uncovered interest parity concept explains that undervalued local currency is mostly caused by the external factors such as the plan of the Federal Reserve of US to increase the Fed Fund Rate which makes capital to be outflowing back to the US, therefore, local currency depreciated and local stock market index dropped. However, the impact can be managed if a country has a surplus CA. Regarding this, in the current unstable global economic condition, Indonesia needs to have a surplus CA to relaxing the impact of fluctuation of Rupiah exchange rate, caused by the external factor, to the merchandise export. The latter, in the end, is very crucial for the CA surplus. The relation between the stability of local currency and surplus in CA is endogeneity, and this paper attempts to analyze how a country and region can generate a surplus in merchandise trade.

International economics adopts and adapts the formula of Gravity Model³ in explaining the most practical relations within countries in both the trade and investment. Data of the WTO's share of intra and extra shows that country has stronger trade and investment relations with its neighboring countries. This explains why regional economic cooperation with geographic proximity is matter in describing strong economic relation within neighboring countries. This fact confirmed that Gravity Model also explains international economic realities. At the regional level, ASEAN (Association of Southeast Asian Nations) is very crucial for Indonesia. This organization has been moving from FTA which aim for the intra-regional trade to the Economic Community (EC) which aim for the intra-regional investment⁴.

As explained in Gravity Model, international trade and investment flows are biased to a country with big GDP and high GDP per Capita such as USA which controls 24.5% of World GDP with US\$ 52,194 GDP per

³ Original formula of Gravity Model is $F = \frac{G.M_1M_2}{r^2}$ of which F is Force, G is Constant, M is mass of object, 1 & 2 refer to object 1 & 2, r is distance. International economics adopt and adapt into new formula where M is changed to be GDP and r is proxied by cost of logistic or transportation. This model also applies GDP per Capita as a proxy of power to complete the mass of GDP. High GDP without high GDP per Capita is like high mass but less power. In international economics of trade & investment, the cooperation power is biased to the country with high GDP and high GDP per Capita. Therefore, country with this complete strength obtains full gravity power as a hub such as USA in America, Germany in EU, East Asia Countries in Asia.

⁴ Verico, K (2017). *The Future of the ASEAN Economic Integration*. Palgrave Macmillan: London, pp. 1-269 (Monograph)

Capita (High Income Country). In the era of President Obama, USA was more on Mega Regionalism such as the Trans-Pacific Partnership (TPP) or Regional Plus Framework such as ASEAN – USA Summit. In the era of President Trump, on the opposite, USA is more on the bilateral economic agreement. This affects the world's economic cooperation preferences. ASEAN members including Indonesia is now also favoring bilateral economic agreements. There are two most practical economic cooperation options available for ASEAN members including Indonesia: ASEAN FTA for regional level and Bilateral Free Trade Agreement (BFTA) for the bilateral level (**Diagram 1**).

To have a resilient exchange rate given the fluctuation of the external global factor, Indonesia needs to optimize her trade balance surplus in particular in merchandise export. This needs strategic analysis on how to increase merchandise export. This paper focuses on trade side and investment that aims to increase trade surplus. The latter is important to connect between trade surplus and investment orientation. Both the trade and investment side are covered under the FTA, and this paper focuses on those two most practical agreements of the regional level of FTA of ASEAN and country level of BFTA in Indonesia. As for the regional level, this paper limits countries of analysis to the five ASEAN members of Indonesia, Malaysia, Thailand, Philippines, and Vietnam. The latter has been chosen because becoming more attractive to the investor. As for the country level, this paper analyzes both agreements of Indonesia – Japan Economic Partnership Agreement (IJEPA) which effective in 2008 and Indonesia – Pakistan Preferential Trade Agreement that effective in 2013. Period of analysis is 25 years from 1992 to 2016. All of the FTA proxies of Five ASEAN member's Free Trade Agreement (FTA), Indonesia – Japan Economic Partnership Agreement (IJEPA) and Indonesia – Pakistan Preferential Trade Agreement (IPPTA) utilize time-dummy variable of the implementation effectiveness of 2010, 2008 and 2013 respectively.

Last but not least concern of this paper is on the role of the institution in obtaining and enhancing the benefits of FTA. The FTA will be beneficial if it can positively contribute to either trade or investment of a country. There are two sources of asymmetric information problems which potentially block a country to gain the optimum benefit of the FTA. One is asymmetric information within countries. If one country has a way better economic condition, compare to another country then 'hub and spoke problem' emerge. The country with more advanced economic level will be the 'hub,' and the partner will be the 'spoke.' Bilateral agreement will tend to be biased toward the interests of the 'hub'. Two is asymmetric information between government as negotiator and business people as the executor. If the government is satisfied only up to 'completing the negotiation' and does not have the intention to follow up until the implementation then FTA will end up as an agreement without real impact to the ground. If this happens then, business people will not be able to gain any benefit from the FTA. Given this asymmetric information problems, government and business people need an institution that can intervene in the market by providing information about the FTA and advocating the market to gain optimum benefits of it.

1.2. Objective

Based on the background, this paper has three objectives: One is to assess the effectiveness of AFTA in increasing intra-trade and intra-investment of the five ASEAN members. Two is to analyze the impact of IJEPA on FDI inflows of Japan in Indonesia and the impact of IPPTA on the net export of Indonesia-Pakistan. Three is to analyze the role of FTA center in enhancing the benefits of FTA. The first two objectives will be responded through the utilization of econometric modeling while the last objective will be responded over the field assessment resulted from the Focus Group Discussion (FGD) in Jakarta.

1.3. Study Question

Based on the objective, this paper attempts to answer three questions: One, does AFTA effective in increasing intra-trade and intra-investment of the five ASEAN members? Two, does IJEPA and IPPTA effective in increasing FDI inflow of Japan in Indonesia and trade surplus of Indonesia over Pakistan? Three is FTA center necessary for enhancing the benefits of FTA?

1.4. Method

This paper provides two methods: one is descriptive analysis, and two is inference statistical analysis. The descriptive analysis describes five facts: First is Indonesia's comparative advantage and competitive advantage. It uses Revealed Comparative Advantage (RCA) and Constant Market Share Analysis (CMSA) index to describe them respectively. Second is Indonesia's market proportion as the proxy of market dependency and its risk afterward. It utilizes Gini Hirschman Index (GHI) to describe Indonesia's market proportion of export. The third is the importance of export orientation for merchandise market orientation. This applies Granger Causality and Elasticity Method which connect export and FDI inflows in Indonesia. The first three facts are formulated to argue that a country, in this paper, featuring Indonesia needs economic advantages of trade and investment, and both require FTA. Indonesia builds FTA at two levels: regional (AFTA) and bilateral (current BFTA with Japan & Pakistan). Fourth is the importance of FTA for Indonesia. This paper learns from previous studies. At the regional level, the AFTA is effective in increasing intra-trade in ASEAN and ASEAN Plus Frameworks including AFTA+1 is appropriate to increase intra-investment in ASEAN (Verico, 2017)⁵. Fifth, to respond to the role of the institution in utilizing FTA for optimizing its benefit gain, this paper adopts and adapts finding from the FGD of the FTA center which involves government, academician and business people in Jakarta-Indonesia.

As for Inference Statistic Analysis, this paper formulates two econometric modeling to assess the role of AFTA for the five ASEAN members and BFTA for Indonesia. This paper applies panel data modeling for five ASEAN members of five members (Indonesia, Malaysia, Thailand, Philippines and Vietnam) of 25 years of the period from 1992 to 2016 for analyzing the impact of AFTA to five ASEAN members intra-trade and intra-investment. The model is calculated with three approaches: Pooled Least Square (PLS) with Fixed Effect and System of both the Seemingly Unrelated Regression Estimator (SURE) and Simultaneously Equation Model (SEM) of 3SLS. As for the BFTA modeling, this paper uses Indonesia's BFTA of both with Japan (IJEPA 2008) and Pakistan (IPPTA 2013) to analyze the impact of BFTA on investment (FDI inflows of Japan in Indonesia) and trade (net export of Indonesia over Pakistan).

2. Literature Review

2.1. Trade & Investment Relations in Indonesia: ASEAN Centrality & BFTA Review

ASEAN needs other countries to enhance her trade and investment. Soft and Open Regionalism principle significantly help ASEAN to invite non-member states but with potential FDI inflows to join ASEAN Plus Frameworks such as ASEAN+1 FTA, ASEAN+3 Monetary & Finance, ASEAN+6 of the Regional Comprehensive Economic Partnership (RCEP) and ASEAN+8 of the East Asian Summit (EAS). Non-member states will enjoy the ASEAN trade liberalization before being stimulated to invest in ASEAN (Verico, 2017).

⁵ Ibid

In these ASEAN Plus Frameworks, ASEAN centrality is vital to optimize benefits from the frameworks and to avoid regional economic divergence. In her long-term economic plan, by Law 17/2007, Indonesia defines VI Development Direction for International Relations (Arah Pembangunan Luar Negeri) of which one of them is the enhancement of ASEAN's effectiveness and the enlargement of ASEAN cooperation network. This support the spirit of ASEAN Open Regionalism in the ASEAN Plus Frameworks mechanism. In this document, Indonesia further explains eight international relation priorities, and for ASEAN, the document aimed Indonesia's readiness towards the ASEAN integration progress and growing Indonesia's role in ASEAN. This priority has been described into 11 strategies of which seven of them are related to the economic integration. They are inclusive diplomacy of ASEAN which part of the ASEAN Open Regionalism principle, the ASEAN centrality in the ASEAN enlargement process and East Asian Summit as the basic platform of ASEAN enlargement and the rest four are related to the ASEAN Community including the ASEAN Economic Community (AEC). Study of the LPEM in 2015 found that the AEC is important and Indonesia's business people shares enthusiasm upon it. This study finds that they expect intra-investment would be increased during the AEC as exactly predicted in the theory of regional economic integration. It is clear that Indonesia shares and fully support the spirit of the ASEAN Plus Framework with the condition or subject to the ASEAN centrality.

Bowles and MacLean (1996) explain that Southeast Asia has strong relationships both in trade and investment with East Asia countries. This supports the ASEAN+1 FTA frameworks of the ASEAN Japan FTA, ASEAN Korea FTA, and ASEAN China FTA as well as ASEAN+3 of the ASEAN and China, Japan & South Korea. This cooperation covers economic integration of advanced technology products from Japan and South Korea and skilled-labor intensive from China to labor-intensive products in ASEAN. This network controls both trade and investment as well as monetary and financial sector cooperation (ASEAN+3). These are the key success factors in the shifting process of ASEAN from FTA to the economic community towards the common market and monetary & political union. Baldwin (2006) also argues that ASEAN Plus Frameworks, in particular, the ASEAN+3 has natural interconnection of trade and investment between East and Southeast Asian countries.

Ravenhill (1995) explains that AFTA can stimulate FDI inflows if ASEAN utilizes the open regionalism framework as 'foreign investors favor liberalization in a region-wide market'. Soesastro (2001) proposes ASEAN adopt open regionalism principle in supporting its economic integration enhancement by shifting intra-trade to intra-investment. This can be considered as the original idea behind the series of the ASEAN Plus cooperation during the era of 2000's which finally shown that ASEAN can attain the success story of increasing investment in the region even without the customs union. Verico (2010) explains that ASEAN can achieve the success story of the customs union (CU) of the EU that increased investment in the region during the period of 1967-1987 not with the CU but with the implementation of the ASEAN Plus Frameworks.

Manger (2005) proves the impact of BFTA in developed countries by taking Japan as the case study. This study found that Japan was affected by the 'bandwagon effect' in joining other developed countries which already had BFTA. He found that BFTA for the developed country has been designed to avoid being discriminated by the developing countries in the region.

Menon (2006) explains that Bilateral Trade Agreement or Bilateral Free Trade Agreement (BFTA) can play as an alternative to the deadlock in multilateral meeting and practically can be an alternative for trade and investment liberalization on certain commodities in particular time and specific region.

Jang (2011) found that the impact of BFTA on FDI inflows within developed countries is negative while that within developing countries is positive. This research adopted the Gravity Model which was completed by an Endogeneity test of Difference in Difference (DID) and Dynamic Specification test of Arellano – Bond estimator.

BFTA can make trade arrangements very complicated (Spaghetti Bowl Model) due to its ‘substitution effect’ on regional trade arrangements which will be increasing economic gap within member states and weakening the necessary condition in regional economic cooperation: economic convergence (Panagariya, 1995, Tumbarello, 2007, Kawai and Wignaraja, 2009)

The world economy has entered a new normal because of at least two things, one the world tends to become more protective since the developed countries attempt to increase their domestic supply side. Two, the USA has been more on the bilateral economic agreement. This new normal affects developing countries including Indonesia which more progressive in having bilateral trade and investment agreement with her trading partners. From the regional economic perspective, bilateral like mega regionalism has a potential risk on the economic divergence which can deteriorate ASEAN economic integration. But in reality, ASEAN member state has no choice; to be not left behind to the members who have bilateral, she has to create bilateral agreement too. The thing is how to utilize the BFTA as much as the win-win solution for all negotiating countries.

2.2. FTA Center Establishment: External & Internal Asymmetric Information

Bhagwati (1971) argue that distortions might arise from market imperfections or from misguided policy interventions that were severely schemed. He suggested that well-designed government interventions could reduce distortions in the domestic and recover the optimality of free trade of both the small and open economy. Nevertheless, improving the benefits from trade only hold for exogenous constraints of the instruments of intervention and no longer worked when asymmetric information happens.

Stiglitz and Brown (2000) argue that one of the factors which make market mechanism failed in allocating the resource is the existence of asymmetric information. Asymmetric information is an uncertain situation in which the information of the product between producer and consumer is unequal and incomplete. The consumers do not know about the quality of the product until the contract is made. This asymmetric information creates market failures and needs the government intervention.

Perroni and Whalley (2000) find that a regional trade agreement between asymmetric market-sized countries could be supported by certain side payments that were transferred from the small country to the large one. They confirmed the hypothesis that large and small country regional agreements would not have occurred without side payments.

Le Grand et al. (2008) argues that a market fails to achieve resource allocation due to the asymmetric information. If the consumer is rational, then it will make decision-based on the marginal benefit of the consumption, and if the producer is rational, then it well decides based on the profit maximization and consider the marginal cost.

Martimort and Verdier (2012) find several insights of redistribution of gains from trade when asymmetric information appears. First, free trade might no longer improve welfare for a small economy even when it was accompanied by a set of domestic regulations with the optimal scheme. Second, since asymmetric

information induced distortions in the general equilibrium, the small economy became relatively wealthier regarding sensitive information. The asymmetric information might reverse the trade patterns. Third, asymmetric details in intermediate sectors which produced inputs for tradable goods generate distortions that could not be eliminated even when the complete set of policy instruments was established to regulate those sectors. Therefore, it was concluded that trade openness might improve welfare when it alleviated the distortions induced by asymmetric information.

Yamamoto (2014) examines Free Trade Agreement (FTA) negotiations between two asymmetric countries given the existence of the asymmetric information using the game theory. This study shows that the large country sometimes picks the smaller market-sized nation as its FTA partner country to increase more expected gain. Yet, the small nation could convince the large nation to accept the FTA by offering side payments in advance.

Gori and Lambertini (2014) argue that the government of the small country could not find the positive environmental effects of its firm's export to consumers abroad when the information is asymmetric. Furthermore, this study found that the Pareto optimum is always obtained since the large country still distorts trade policy. They suggest that welfare is optimum in equilibrium if the information is symmetric and the opposite, trade liberalization with asymmetric information always requires the second-best outcome of the trade policy.

Camargo, Kim, and Lester (2016) show that asymmetric information prevents both the manifestation of trade gains and the valuable information production to other market agents. They suggest that some government interventions are bound to reinstate the exchange of information. However, an excessive interference may exhaust informational content exchange.

2.3. FTA Center Role for Small-Medium Enterprises Empowerment

Takahashi and Urata (2008) find that the utilization value of FTA among Japanese-based enterprises was relatively modest even though Japan was active on FTA policy. They argued that this phenomenon might be due to the low volume of trade between firms based in Japan and the country's FTA partners. Furthermore, they found that large enterprises were more likely to utilize the FTA schemes compared to Micro, Small and Medium Enterprises (MSMEs). Thus, they also suggested a positive relationship between the size or productivity of the enterprises and its FTA utilization, at least at the firm level.

Cheong and Cho (2009) highlight a more positive outcome in the use of FTAs with relatively small and medium-sized developing countries among Asian-based businesses in the Republic of Korea. They revealed that half of the 120 firms surveyed in the Republic of Korea intended to utilize the country's existing FTAs. The majority of MSMEs based in the Republic of Korea was not actively exporting under FTAs since they were already part of the value chains of larger enterprises.

Dagooc (2013) shows that exporters based in the Philippines confront several barriers and spot disincentives to trade under FTAs. Most exporters feel stressed by the complicated rules and procedures associated with the FTAs utilization, although the Philippines government actively encourage enterprises to utilize the country's existing FTAs. In addition, there are several factors that become major disincentives for the MSMEs of the Philippines to fully participate in the FTAs, including the misunderstood of the FTAs, tangled trade procedures in the trade partner countries, unharmonized goods and services code within

the ASEAN region, and the difficulty on accessing the most recent informations in regard to the arrangements dealing with FTAs.

Tambunan and Chandra (2014) suggest that there is a general expectation that the enforcement of all existing FTAs lead by ASEAN will bring benefits to all enterprises in each ASEAN members regarding a greater export opportunity and supply of production factors with a competitive price and better quality. The evidence shows that the gains from the agreement have not been distributed equally across the region, with the majority of enterprises capable of using these FTAs are the large and multinational enterprises, including both ASEAN and non-ASEAN enterprises.

2.4. Articulating Free Trade Agreement into Implementation

Etzkowitz (2002) argues that the three institutions of industries, governments, and universities, are experiencing an internal transformation, and creating hybrid organizations such as technology centers and virtual incubators. This is a self-reinforcing dynamic of economic development that based on knowledge. In specific regional context, the university, government, and industry are learning to encourage economic redeployment through the improvement of the proportional relationship and joint efforts. In order make it happen, the local region needs to have support from the scientific and technological institutions and need to establish access to other necessary parts and instruments that encourage innovation such as investment incentive mechanism and the joint institution.

Etzkowitz (2011) defines the triple helix model as the interactions between university, industry, and government. The study further explains its contribution to the firms, and social, economic development. The relationships contribute to the transformation of scientific researches into economic and social development policies. The university increasingly contributes to the creation of a new stage of economic and social development as the transition period towards the so-called 'knowledge-based society'. The relationship between university, industry, and government establish innovation in the environment of science, technology, and culture of entrepreneurial initiative. Innovation has been increasingly growing based on an interaction between university, industry, and government (Etzkowitz, 2003). The entrepreneurial university plays an important role in putting practical knowledge and transforming the inputs for the creation of knowledge. The advancement of the technological level of industries made firms to be closer to the academic life. The government play as public enterpriser and venture capitalist aside from its traditional role as regulator and policymaker.

Bebchuk and Fried (2004) argue that the principal-agent problem might appear if agent and principal have different interests. The asymmetric information is happening when the agent has more information than the principal. Therefore, the principal could not assure if the agent's behavior is in the principal's best interest. This is known as the principal-agent problem.

Whitford (2006) analyzes how a principle applies in any joint binding contract. There is a need for the team of two agents whose joint product affects the value of the asset of the principal. The experiment result shows that agents give higher effort than forecasted when the principal enforces a contract. Moreover, while sometimes principals manage the team of agents using the incentive then agents will provide more effort since they trust each other.

Damro (2007) examines the utility of principal agent in trade policy by using a comparative analysis of the inclusion of the European Union (EU) on two different international agreements of the International

Competition Network and the World Trade Organization. Period of analysis is 2001 to 2006. The comparison of EU institutions and participation in these two cases shows that while principal agent seems appropriate to explain international negotiations in regulatory policies or competition, yet it was unable to explain the development of the distributive policies of trade. Furthermore, the result revealed potential problems in the multiple agents and higher probability in trade policy. The study suggests being cautious in using the ‘principal-agent concept’ to explain the behavior in international trade negotiations.

Saengchai et al. (2015) analyze the educational institution’s capability to support free trade agreement on educational service in the ASEAN community. The study reveals that the free trade agreement on educational service has four modes of services. The first mode is cross-border supply, which educational institutions provide educational services to overseas customers. The second mode is consumption abroad, which overseas customers use educational services of educational institutions. The third mode is the commercial presence, in which educational institutions have educational offices abroad. The fourth mode is the movement of natural persons in which academic officials and students are exchanged. This study also suggests that the educational institution’s capability development also enhances the capability of graduates to meet the international standards, empower higher educational institutions, and strengthen the role of educational institutions in the ASEAN community.

3. Descriptive Analysis

3.1. RCA and CMSA Mapping: Five ASEAN Members

This paper describes both the comparative and competitive advantage of the selected member states of five ASEAN members. Comparative advantage is measured using Revealed Comparative Advantage (RCA)⁶ while the competitive advantage is calculated using Constant Market Share Analysis (CMSA)⁷. The database was obtained from Harmonized System (HS-2). If a product has RCA index more than one, then it is RCA, and the opposite is RCD (Revealed Comparative Disadvantage). As for CMSA, this paper takes Competitive Factor (CF) which compare the growth of a country export and world export of the particular product. If the CF is positive, then Indonesia’s export growth in the particular product is higher than that of the world, and negative is the opposite. This paper makes a classification as “Great” for a product that has both RCA more than 1 and CMSA more than positive. This paper uses 2015 dataset for calculating the RCA index and 2011-2015 dataset or the CMSA index.

$${}^6 RCA_{to} = \frac{X_{ij_{to}} / X_{j_{to}}}{X_{iw_{to}} / X_{w_{to}}}$$

Variables: $X_{ij_{to}}$ = Value of Export of product i from country j to the world at to time; $X_{j_{to}}$ = Total value of Export from country j to the world at to time; $X_{iw_{to}}$ = Value of Export of product i from the world to the world (W) at to time; $X_{w_{to}}$ = Total value of Export of the world to the World (W) at to time

$${}^7 X_{inwt1} - X_{inwt0} = \sum m_{iw\Delta t} \cdot X_{inwt0} + (m_{iw\Delta t} - \sum m_{iw\Delta t}) \cdot X_{inwt0} + (X_{inwt1} - X_{inwt0} - m_{iw\Delta t} \cdot X_{inwt0})$$

General Factor: $\sum m_{iw\Delta t} \cdot X_{inwt0}$; Composition Factor: $(m_{iw\Delta t} - \sum m_{iw\Delta t}) \cdot X_{inwt0}$; Competitive Factor :

$(X_{inwt1} - X_{inwt0} - m_{iw\Delta t} \cdot X_{inwt0})$; Variables: X_{inwt0} = Value of Export of commodity i in country n to world at to time; X_{inwt1} = Value of Export of commodity i in country n to world at $t1$ time; $\sum m_{iw\Delta t}$ = changing in total world export; $m_{iw\Delta t}$ = changing in world export on commodity i

Table 1 shows that Indonesia and Philippines have around 21% of HS-2 product with “Great” classification while Thailand has 20%, Malaysia has 13%, and Vietnam has 23%. Given the size of GDP and purchasing power of GDP per capita, the percentage of Great does not suddenly reflect country prosperity. This is because the level of value added of a product is more matter than just number of the product itself. This table shows that Indonesia has great classification and incomparable to other five ASEAN members in wood, paper product & footwear. They are all either primary product or labor intensive with relatively light technology. Philippines has incomparable great product compare to other five ASEAN members in animal or vegetable fats & oils. Thailand has it in manufacture products while Malaysia has articles of stone, ceramic, cement & glass and Vietnam has it in vegetable product & prepared food which both compete with Malaysia. This table proves that each five ASEAN members member has its great classification product and they are all completed each other with some tight competition in particular products such as in food manufacture and base metal industry.

3.2. Export Divergency in Volume, Value and Country: Indonesia

This paper chooses to focus on Indonesia’s export patterns in the last 15 years (2003 & 2016). It does not take too short or too long period of analysis to avoid too soon and too obsolete analysis. Another consideration is the year of 2003 as the beginning of increasing GDP per capita after the crises. The pattern of it similar to J-curve whereas 2003 is the beginning of the bottom-up cycle. The year after this, 2004 is the first time for Indonesia to have direct election for the presidential election and the starting year of progressive economic development in Indonesia since the AFC 1998. Indonesia has been experiencing a decrease in export varieties. It can be seen by comparing the top 10 highest increase with the top 10 highest decrease in volume between 2003 and 2016. Indonesia gave up heavy industry of arms & ammunition, railway & tramway track, medium industry of clocks, watches, silk, furniture and light industry of umbrellas, walking sticks, cork, basket ware, leather as well as food-related products of meat & dairy to be more less-various products of food-related products of vegetable, edible fruits, oil seeds, grains, sugars, beverages as well as animal & vegetable fats & oils.

Figure 2 shows that furniture, wood product, apparel accessories, soap, paper, electronic products are among the top 10 products with the highest number of the export destination. This figure also shows that nickel, arms, meat & cereals, wool & silk, base metal, ores, and tin are among the top 10 products with the lowest number of the export destination. The latter reflects the vulnerability in export destination calculated with the Gini-Hirschman Index (GHI)⁸ moreover, the probability of export decreased. This paper argues that the higher number of export destination the lower GH index, the lower risk of dependency in particular destination and the lower probability of export to extinct.

This paper measure Indonesia’s GHI to understand the vulnerability level of the export product of HS-2. GHI number is between 0 (zero) to 1 (one) that the closer to 1 is more vulnerable as it reflects dependency to the particular destination while the closer to 0 is the opposite. Based on the value of export of HS-2 products, this paper calculates GHI placed in **Table 2**. This table shows that based on the highest value in 2016, most of Indonesia’s top 10 export value products shown improvement regarding diversification of export destination. Almost all of GHI has been improved except for furniture, preparation of meat & fish

⁸ $GH = \sum \left(\frac{VA_{iwt0}}{\sum VA_{iwt0}} \right)^2$ of which GH is Gini-Hirschman Index; VA is value of export; i is product by HS; w is export destination of product i; to is particular time.

and vehicles other than the railway. **Table 3** shows that furniture one of product which export volume decreased significantly in 2016 up to 56% of export volume in 2003. Yet **Table 2** shows that value of export of furniture was merely increased which indicates the upgrading of quality in furniture has occurred. **Table 2** also shows that upgrading in quality has happened in meat and fish as their preparation product's value of export has increased away compare to that of their raw product. This table also shows the export value of footwear grows better than that of apparel. Export value of vehicles other than railway increased significantly with more diverse export destinations. Export of electronic products is better regarding GHI, but its value grows slowly compared to the organic chemical. For beverage products, Indonesia's export shown good achievement regarding value but not much improvement regarding GHI even number of the emerged destination (48) was higher than the number of the vanished destination (13). This paper suggests that divergence or convergence of export product can not only be seen regarding changing in volume but also in value and its market risk proportion. The latter needs GHI measurement.

3.3. Export Led Industrialization: Trade – FDI Causality & Elasticity in Indonesia

This paper calculates the Hodrick-Prescott Filter (HPF) to compare nowcasting and potential with yearly based of 36 years of the period from 1981-2016 shows that after 2011, Indonesia's economic size of GDP is back to back with its increasing potential size of GDP. However, this calculation shows since 2012, Indonesia's economic growth is lower than its potential growth. Both calculations indicate that Indonesia is still behind the curve of its potential economic growth due to the building block in her GDP capacity. There are several factors behind this phenomenon from demand (consumption) and supply side. As from demand side, consumption has been shifted from goods to service & leisure. The engine of growth has been smaller because the proportion of goods in total consumption at around 55% is higher than that of service and leisure at 40%. Two is domestic market tends to be saturated. It can be seen from the slower growth of domestic consumption since 2012 even its growth has always been higher than total economic growth. HPF calculation shows that the highest gap between real domestic consumption and its potential is still lower than the peak period of it in between 1995-1997, but it is still merely higher than potential. This means the domestic market has been starting to be saturated. As from the supply side, Verico (2018)⁹ shows that Indonesia's comparative and competitive advantage since reform era after the AFC 1997 does not change much from primary product and food & beverage industry. Given this, Indonesia needs to enlarge its market orientation from domestic to global market.

Diagram 2 provides the calculation of causality (Granger) and elasticity (double log) on net export, manufacture value added and FDI inflows using yearly data from 1987-2017. This diagram shows the calculation that Net Export affects Manufacture Value Added significance at 5% in lag-1 but not the opposite. The elasticity effect is less than one (0.72). Manufacture Value Added affects FDI inflows significance at 5% in lag-2 with elasticity more than one (1.2). This means that export orientation market will be increasing manufacture value added and FDI inflows afterwards. In another previous study¹⁰ using system model with panel dataset it is proved that Manufacture Value Added can also increase Portfolio

⁹ Verico, K (2018). Does Indonesia's Macroeconomy Work Well Towards Political Year? *Working Paper of the LPEM FEB UI No.19*: April

¹⁰ Prabowosunu, A., and Verico, K. (2017), Indonesia's Short-Term Capital Inflows in 2005-2015 Period: A Blessing or A Curse, *Unpublished Undergraduate Thesis*

Inflows significance at 1% with elasticity 1.5. These series of studies prove that export orientation market is very important to increase manufacture value added and investment both direct investment and portfolio inflows. At this point, this study suggests the utilization of FTA is necessary as long as the country can increase her export value added and enhance her global market options. It needs government intervention and this explains why institution like the FTA center is required.

3.4. AFTA and BFTA Benefits for Five ASEAN Members and Indonesia

ASEAN economic architecture looks like a 'doughnut' without central point. It has Indonesia as a member state with big size of GDP which make it become a member state of G-20. Indonesia share in ASEAN population is 40% and share in GDP is 36% yet her GDP per Capita still at the level of middle-income country. On the opposite, ASEAN has Singapore with very high-income level of US\$ 56,287 per year but her population and GDP size are less than 1% and 12% respectively. In order to have strong regional economic integration gravity, ASEAN needs a big and high-income country. Indonesia has a vast potential to be the ASEAN economic integration gravity. It has been predicted that Indonesia can achieve high-income level with GDP per capita per year above US\$ 12,475 in between 2033-2040. In order to succeed this aim, ASEAN needs to increase her trade and investment interconnection. Currently ASEAN has around 24% of intra-trade and 12% of intra-investment. This means that ASEAN still depends more on external trade and investment from non-ASEAN members.

ASEAN's soft and open regionalism principles are suitable to attract trade and investment from potential non-member states throughout the implementation of the ASEAN Plus Frameworks such as ASEAN+1 FTA, ASEAN+3, ASEAN+6 of the Regional Comprehensive Economic Partnership (RCEP) or ASEAN+8 of the East Asian Summit (EAS) (Verico, 2017)¹¹.

The ASEAN Plus Frameworks is kind of the internalization of external potential non-members to be part of ASEAN. It gives promising intraregional trade benefits of Southeast Asia for the non-members which then stimulates the non-members to invest in Southeast Asia both aiming the ASEAN market and non-ASEAN market whereas ASEAN as the production base. This open regionalism of ASEAN Plus Frameworks has been predicted to enhance trade and investment relations in Southeast Asia.

Table 4 shows that in terms of productivity, EAS (ASEAN+8) with 1.03 productivity level is more productive than ASEAN+3 with 0.87, RCEP (ASEAN+6) with 0.64 and ASEAN with 0.39. ASEAN constructs all of the ASEAN Plus Framework options and the most benefited option is the EAS. The open regionalism with the ASEAN Plus Framework of ASEAN enlargement centrality to the East Asian countries of Japan, China, Korea is important because: (1) ASEAN has long history of economic cooperation with East Asian countries (China, Japan and South Korea) from trade, investment to finance. The latter was intensive during the Asian Financial Crises in 1997-1998. (2) ASEAN has strong relations with East Asian Countries since centuries ago due to the high economic integration gravity caused by the closed geographic proximity. (3) ASEAN has stronger economic relations with USA and Russia than that with the European Union (EU). EU is worried with the 'hollowing out' risks which potentially increase unemployment in Europe if their investors invest in Asia. This makes business enlargement of the EU come from the West goes to the East

¹¹ Verico, K (2017). *The Future of the ASEAN Economic Integration*. Palgrave Macmillan: London, pp. 1-269 (Monograph)

as the latter is part of Europe. This increase employment in the eastern part of Europe and against the risk of hollowing-out if they invest in Asia.

The enlargement of ASEAN intra-trade and intra-investment with the principle of open regionalism has been built above the foundation of ASEAN centrality value. One of the reason is to keep economic convergence in Southeast Asia. Economic convergence is the necessary condition for the successful story of economic integration including for ASEAN. **Table 5** shows that member state with high-income level books relatively low economic growth compares to the member state with middle-income level and member with low-income level books higher economic growth. These facts indicate the trend of economic convergence in Southeast Asia and this is important for the ASEAN economic integration process. The economic convergence condition is the reason why ASEAN is risky to the TPP with or without the USA. Even the productivity of the TPP with the USA of 3.23 and without the USA of 1.79 is higher than that of the EAS, ASEAN+3, and RCEP but it is risky to the ASEAN economic convergence since only four ASEAN members joined the TPP. The higher the benefits from the TPP for these ASEAN members, the higher economic divergence in Southeast Asia and at the end this will harm ASEAN economic integration.

Study of LPEM (2015) on the bilateral economic relations between Indonesia & Japan (IJEPA) and Indonesia & Pakistan (IPPTA) which focuses on trade and investment using the modification of Regulatory Impact Assessment (RIA) method found that Indonesia is possible to succeed in her bilateral negotiation. If she bilaterally negotiates with a country that has higher income per capita than her, then Indonesia has to aim for FDI inflows, and if she negotiates with a lower income per capita country then Indonesia has to aim for the surplus in trade balance (Verico, 2018)¹².

3.5. FGD of FTA Center: Indonesia

Focus Group Discussion was held in Indonesia at the Ministry of Trade on May 30th to 31st 2018¹³. This FGD presents much thoughtful stories and ideas on how important the FTA utilization and the role of the institution in intervention, for instance, doing to solve asymmetric information between involved negotiating countries and between government and business people domestically. Indonesia needs FTA center to support government aim at optimizing the utilization of FTA by the business people. The government needs to collaborate with both the academicians whose expertise in international trade and former professional whose experience in dealing with export and its financing. This triple helix kind of cooperation can close the circuit from the need of evidence-based policy which can be provided by the academician to recent negotiation update provided by the government and utilization of FTA by the business people. This needs the center that consists of academician and professional yet under government support.

Academician must translate and transform the complicated agreement of free trade to a simple document for business people. Professional has two tasks: first is to inform and advocate business people to understand this simple-form document and second to assist business people with financing and to search

¹² Verico, K (2018). Modification of the Regulatory Impact Assessment on Indonesia's Trade, Investment and Industrial Incentive Policies. *Journal of Economic and Finance in Indonesia*, forthcoming

¹³ This Two-Day FGD was attended by 81 participants which consists of 50 government officers of 40 state ministerial officers and 10 provincial trade & industry officers of the five provinces, 15 FTA center professional personnel and 16 academicians from five campuses

for its appropriate sources¹⁴. Given facts in literature and discussion in the FGD, this paper argues that optimization of FTA utilization needs intervention. Therefore, institution role is necessary. The institution has to be streamlining the regulations and relaxing their implementation. Good communication between related government institutions is important to making FTA will not stay as standing document but the living one. Strong communication within government institutions and good collaboration between the FTA center and the government are the two most vital keys of the success story of FTA utilization and export value improvement.

4. Inference Statistic Analysis

This paper applies three models of FTA to assess the impact of trade arrangement at regional (five ASEAN members) and bilateral (Indonesia-Japan and Indonesia-Pakistan). This paper adopts system model to assess the impact of FTA on the intra-trade and intra-investment of the five ASEAN members in equation (4.1.1) and equation (4.1.2). Both variables are representing the objective of the FTA. As for bilateral level, this paper uses time series with OLS estimator to find the impact of IPPTA in equation (4.3), and the impact of IJEPA in equation (4.4). The OLS estimator is chosen since each observed Indonesia's partner country has its time dummy variable, which means that each country needs a specific model. Furthermore, the five ASEAN members FTA, IPPTA & IJEPA use time-dummy variables with the different year.

The period of observation for the model of the impact of AFTA on five ASEAN members Trade and Investment in equation (4.1.1) and (4.1.2) consist of 25 years of the time dimension (1992–2016) with five countries as space dimension of Indonesia, Malaysia, The Philippines, Thailand, and Vietnam. The period of observation for the model of bilateral trade (net export) between Indonesia and Pakistan in equation (4.2.1) consists of 22 years of time series (1995-2016) and the model of bilateral FDI inflows of Japan's FDI in Indonesia in equation (4.3.1) consist of 23 years of time series (1995–2017). Details of the equation, variable, hypothesis, for the first model (five ASEAN member's FTA) can be seen in **Table 6** and for the second (IPPTA) and the third (IJEPA) model in **Table 7**. The reduced form of system equation results for the first model can be seen in **Table 8**. The result for PLS FE can be seen in **Table 9** and the second and third model in **Table 10** and **Table 11** respectively.

4.1. Intra-Trade and Intra-Investment in Five ASEAN Members: FTA 2010

As for the first model, this paper observes the five ASEAN members consists of Indonesia, Malaysia, Thailand, Philippines, and Vietnam. This paper chooses 2010 as time dummy for the FTA given the complete ASEAN Plus FTA framework. This was earlier than that of the ASEAN-4 (Cambodia, Laos, Myanmar & Vietnam) in 2015. This study utilizes the system model of the Seemingly Unrelated Regressions Estimator (SURE) and the Simultaneous Equation Model Estimator (SEME) using Three-Stage Least Square (3 SLS) method. Also, this paper also adopts the Fixed Effect of PLS (Pooled Least Square) to obtain the constant level of each observed country with Indonesia as the basis country. In total, this paper

¹⁴ Thailand can be considered as the best practice on how to optimize the utilization of FTA for commercial presence (mode 3), natural person presence (mode 4) and trade. The author witnessed in Japan, Thai's entrepreneur can open business of restaurant given very regulated economic sector. Thai's entrepreneur establishes restaurant in Japan (commercial presence) and received investment income, the workers are from Thailand (natural person presence) and obtained remittance, then it can be found that in Thai's restaurant can be found the ingredients coming from Thailand. The latter contributes to export value (trade). There are at least three sources for Thailand's current account inflows (investment income, remittance & export value).

constructs three models of SURE, SEME & PLS FE to understand the impact of FTA on intra-regional trade and intra-regional investment of the five ASEAN members. The model¹⁵ is constructed as follow:

Equation of 4.1.1:

$$IRT_{it} = C + \beta_1.GDP_{it} + \beta_2.CONSUM_{it} + \beta_3.DIST_{it} + \beta_4.GR_{it} + \beta_5.ER_{it} + \beta_6.POP_{it} + \beta_7.EMPL_{it} + \beta_8.EDU_{it} \\ = + \beta_9.ELECONS_{it} + \beta_{10}.FDIPROFIT_{it} + \beta_{11}.DOO_{it} + \beta_{12}.RW_{it} + \beta_{13}.INTRA FDI_{it} + \beta_{14}.AFTA_{it} + e_t$$

Equation of 4.1.2:

$$INTRA FDI_{it} = C + \beta_1.GDP_{it} + \beta_2.CONSUM_{it} + \beta_3.DIST_{it} + \beta_4.GR_{it} + \beta_5.ER_{it} + \beta_6.POP_{it} + \beta_7.EMPL_{it} + \beta_8.EDU_{it} \\ = + \beta_9.ELECONS_{it} + \beta_{10}.FDIPROFIT_{it} + \beta_{11}.DOO_{it} + \beta_{12}.RW_{it} + \beta_{13}.IRT_{it} + \beta_{14}.AFTA_{it} + e_t$$

Both the dependent and independent variables symbol in the equation are described as follow: the left-hand side of the dependent variables are the intra-regional trade (IRT) and intra-regional investment (INTRA FDI). Both data are limited to the five ASEAN member states. Intra-regional trade data is gathered from the data on intra-trade within ASEAN members divided by the total trade with the rest of the world. This data is calculated for each country, and the source is obtained from the World Integrated Trade Solution (WITS) database. As for intra-investment, this study adopts data of FDI inflows by the ASEAN members which had been collected from the ASEAN Statistics database. The main hypotheses are the intra-regional trade, and intra-FDI inflows are hypothetically affected by the time dummy of FTA in five ASEAN members due to the completeness of the ASEAN Plus Framework (2010) with certain control variables. This paper uses reduced form model principle in finding the most significant independent variables as control variables for time-dummy of FTA of which *i* is space dimension, and *t* is time dimension.

The right-hand side of the independent variables are described below:

1. Value of Gross Domestic Product (GDP). The value of nominal GDP represents the economic size of a country. GDP is the most appropriate variable to express the economic size of a country as this covers value added, return on input, and expenditure of final output (Blanchard, 2009). GDP could be

¹⁵ The SUR estimator is chosen under the consideration that the two equation errors are possibly correlated. Therefore, equation (4.1.1) and (4.1.2) need to be written in one system with a SUR estimator, which assumes that non-zero correlation exists among the two errors. Under this method, Intra-regional Trade and Intra-regional FDI Inflows have a one-way relation in which Intra-Regional FDI Inflows affect Intra-Regional Trade, but intra-Regional Trade does not affect Intra-Regional FDI inflows in equation (4.1.1), and Intra-Regional Trade affects Intra-Regional FDI inflows, but Intra-Regional FDI inflows do not affect Intra-Regional Trade in equation (4.1.2). Also, the system uses a GLS since it is more efficient in estimating parameters and yields smaller standard errors. Thus, the SUR estimation runs equation (4.1.1) and (4.1.2) under one system that has uncorrelated errors. The second method, SEM estimator, is chosen since the endogenous dependent variable could affect one of the exogenous variables in equation (4.1.1) and (4.1.2). The Intra-Regional Trade variable could influence the Intra-Regional FDI inflows variable in equation (4.1.1), while the Intra-Regional FDI inflows may influence the Intra-Regional Trade variable in equation (4.1.2). Hence, the Intra-Regional Trade and Intra-Regional FDI Inflows is a two-way relation which affecting one another. This estimator has similarity to SURE regarding its assumption which requires two equations to be estimated into one system and follow a reduced-form method. This study further uses Fixed Effect for panel data method. Fixed Effect assumes that explanatory variables have been correlated with error terms. Fixed Effect is further useful to analyze the constant of each space dimension (country) with a comparison to the basis country. In addition, there is an argument, such a rule of thumb, in panel data estimation which is supported by the econometrics literature dealing with the use of fixed effect that a fixed effect is preferred than random effect when time dimension (*t*) is larger than space dimension (*n*), and when the number of samples were selected previously.

measured by either the value of the final goods and services during a given period at its final price or the total income in the economy at a given period. The value of the goods and services are completely distributed to input factors in the form of wages, salaries, rents. Therefore, the total income in an economy would be the same as the total value of the final commodities at the final price in a given period.

2. Value of Consumption (CONS). Consumption represents the total output of goods and services at the final price consumed by consumers over a certain period. This variable is the value of nominal consumption that represents the equilibrium of supply and demand that is affected by disposable income, and thus allows it to describe the purchasing power of a country.
3. Percentage of Economic Growth (GR). This variable represents the performance of an economy. According to theory, economic growth is a positive indicator for investors to invest in long-run investment or FDI inflows (Salvatore, 2004). The economic growth rate is used as a proxy to review economic condition whether a country is in expansion, crises, recession, or in depression.
4. Number of Population (POP). The number of population is used as an indicator reflecting demand capacity. Economic size is reflected by both the GDP and number of population. Thus, a country with the high population usually also has high nominal GDP.
5. Number of Employed Workers (EMPL). This variable represents the availability of productive production input of labor since labor is an important input factor besides capital and Total Factor Productivity (TFP). This study uses the number of employed workers as a proxy for the employed labor force. Hence, this variable represents the productive production input of labor.
6. Government Spending on Education (EDU). This variable is a proxy for the quality of human capital in an economy. This variable is used as a substitute for the unavailability of data in R&D expenditure by country since R&D expenditure mainly comes from government budgets and the rest from the private sector. Also, this data also reflects the role of government in the human capital development.
7. Electricity Consumption (ELECONS). This variable is used as a proxy for infrastructure. A supply of electricity is essential for the industrialization process. Electricity capacity is considered the most appropriate variable to represent sound infrastructure. This study adopts electricity consumption, which describes the electricity consumption of the observed countries measured in annual Kilowatt Hour per capita.
8. The degree of Openness (DOO). In macroeconomics theory, there are three definitions for the degree of openness: openness in the factor of production, in financial markets, and in goods markets. This study adopts the latter variable of openness. The variable is described as the percentage of total trade to GDP. The higher the index of DOO means the more open is the country's economy.
9. Exchange Rate (ER). This variable is taken from the average nominal exchange rate (local currency unit per US\$), which represents economic stability. Hayakawa and Kimura (2008) suggested that exchange rates were the most important variable to describe economic uncertainty and competitiveness within production blocs in regional production networks. This means that a country with a high volatility exchange rate would be difficult to join with other countries in a production network as its exchange rate volatility harm the entire network. Furthermore, Kiyota and Urata (2004) suggest that exchange rate volatility significantly and negatively affects Japanese FDI inflows in East Asian countries. According to the relative-value-of-wealth approach, the more depreciated a local currency of a host country, the more is the incentive for the investor in the home country to invest. As this study uses

nominal exchange rates, therefore, the increasing ER generates disincentive for the investors to invest regarding FDI in the host country.

10. FDI Profit (FDIPROFIT). This data is formulated by the World Bank in the form of a value of Profit Remittance of FDI (in US\$). This variable is defined as payments of direct investment income in the debit side, which consist of income on equity (dividends, branch profits, and reinvested earnings) and income on the intercompany debt (interest) according to the World Bank. This study adopts this variable as a proxy for the profit advantage of the observed countries, which means that the higher profit remittance from FDI leads to a higher value-added of physical investment, then the more attractive that country is for investors. The hypotheses are:
11. Real Wage (RW). This variable is used as an approach to labor productivity. This is represented by the ratio of GDP per employment. This figure is obtained by dividing the value of GDP to the number of employment.
12. Intra-Regional Trade (IRT). This variable is used as the dependent variable when testing the impact of AFTA to trade creation (intra-regional trade) of ASEAN. This study also uses IRT as an independent variable when testing the relationship between trade creation and investment creation. A previous study by Verico (2007) found that Intra ASEAN Trade affects FDI inflows in Southeast Asia, and further showed that the indicator is the most relevant indicator to calculate intra-trade in Southeast Asia.
13. Intra-Regional Investment (INTRA FDI). This variable is used as the dependent variable when testing the impact of AFTA to trade creation of ASEAN. This study also uses intra-regional investment as an independent variable when testing the relationship between investment creation and trade creation in ASEAN.
14. The cost to Export (DIST). This variable represents the cost to export at a certain time as geographic proximity is no longer a strong factor for bilateral flow. According to the theory, and previous studies, distance has a negative relationship with bilateral flow. Instead of using the geographical distance of capital cities between countries, the model in this study chooses to use the cost to export as a measurement of distance.
15. Dummy AFTA. According to the theory, FTA is established to generate trade creation within a region. AFTA represents an institutional development of ASEAN economic integration to increase intra-regional trade in the Southeast region. AFTA Dummy represents regional trade cooperation among ASEAN members. Thus, this dummy is only used in the analysis of the Impact of AFTA on five ASEAN members in trade and investment. Moreover, this dummy uses 2010 as an anchor. Therefore, years after 2010 is 1 (one) and years before 2010 is 0 (zero).
16. Dummy BFTA. BFTA represents a bilateral trade agreement between two countries involved in the cooperation. BFTA dummy in the analysis of bilateral net export between Indonesia and Pakistan (IPPTA) uses 2013 as an anchor. Thus, years after 2013 is 1 (one) and years before 2013 is 0 (zero). The BFTA time dummy in the analysis of bilateral FDI Inflows of Japan's FDI in Indonesia (IJEPA) uses 2008 as an anchor, and hence years after 2008 is 1 (one) and years before 2008 is 0 (zero).

Table 8 shows that regression on system equation model of the five ASEAN members using the reduced form principle indicated that the ASEAN FTA in 2010 gives positive and significant impact at 1% to intra-regional FDI and the opposite to the intra-regional trade. This result has confirmed that ASEAN is ready to move from intra-trade to intra-investment. For this reason, the ASEAN Economic Community (AEC) with

its major purpose of increasing the intra-ASEAN investment is the right option and at the right time for ASEAN. Overall, both the SURE and TSLS showed the similar results for all selected variables. These indicated that the system model results are robust. Both systems showed that intra-regional trade and intra-regional FDI inflows are in simultaneous relations. As consumption is positive and significance at 1% to intra-regional trade yet negative and significance at 1% to intra-FDI inflows then this paper concluded that the simultaneous relation between intra-trade and intra-investment happened to intermediate products. Both systems showed that productivity (real wage) gives positive and significance at 1% to intra-regional trade but negative and significance at 1% to intra-FDI inflows. Combining this result with the impact of consumption, this paper proved that one, consumption is affected by productivity and two, the intra-investment still aims the unskilled labor. The latter also confirmed that FDI inflow aims intermediate products with light productivity worker. As consumption positively and significance at 1% to intra-regional trade and the opposite to intra-FDI inflows then this paper concluded that intra-regional investment aims to outside five ASEAN members market. This indicated that intra-investment of five ASEAN members uses the five ASEAN members as the production base. Combining the regression results of GDP and consumption impact on intra-regional trade and intra-regional investment, this paper found that for trade, the driver growth variable is consumption while for investment is not consumption. Therefore, currently, investment has been stuck as economic growth has been driven by the consumption. This indicated that ASEAN needs the FTA utilization to attract FDI inflows. In the PLS FE model (**Table 9**), this paper found that most PLS FE's results are consistent with those in the system model. This shown that system and PLS model have provided robustness result. The latter found that all the observed countries are performed better than Indonesia in both intra-regional trade and intra-regional investment. Regarding intra-regional investment, all observed countries have performed better than Indonesia while in intra-regional trade, Indonesia has performed better at least compare to Vietnam and Philippines.

4.2. Net Export Indonesia – Pakistan: Bilateral Agreement of IPPTA 2013

The second model is the bilateral preferential trade arrangement between Indonesia and Pakistan. This agreement was set up in the year 2013 and this year is used as the time-dummy variable for the trade model of the IPPTA. The dependent variable is total net export between Indonesia and Pakistan. This variable is calculated by the difference between the total value of Indonesia's export to Pakistan and Indonesia's import from Pakistan. Data for bilateral export and import between Indonesia and Pakistan are obtained from the World Integrated Trade Solution (WITS) database. The major hypothesis is net export hypothetically affected by the IPPTA of Indonesia and Pakistan with the selected independent variables as control variables. Independent variables follow the first model. The equation is constructed as follow.

Equation of 4.2.1:

$$\begin{aligned} NETEXPORT_{it} &= C + \beta_1.GDP_{it} + \beta_2.CONS_{it} + \beta_3.DIST_{it} + \beta_4.GR_{it} + \beta_5.ER_{it} + \beta_6.POP_{it} + \beta_7.EMPL_{it} \\ &= + \beta_8.EDU_{it} + \beta_9.ELECONS_{it} + \beta_{10}.FDIPROFIT_{it} + \beta_{11}.DOO_{it} + \beta_{12}.RW_{it} + \beta_{13}.IPPTA_{it} + e_t \end{aligned}$$

The model regression of time-series data shown that IPPTA gives positive and significant impact at 1% to the net export of Indonesia over Pakistan. This result meets the expected hypothesis and the previous study using the RIA method (Verico, 2018). Detail result is in **Table 10**.

4.3. FDI Inflows from Japan to Indonesia: Bilateral Agreement of IJEPA 2008

The third model for the bilateral comprehensive economic partnership agreement between Indonesia and Japan. This agreement was set up in the year 2008. This model uses the FDI inflows of Japan in Indonesia as the dependent variable. Data for FDI inflows of Japan in Indonesia was obtained from the Japanese Trade and Investment Statistic database. The data is measured by the net of FDI outflows from Japan to Indonesia from the Balance of Payment data. The main hypothesis is FDI inflow from Japan to Indonesia is hypothetically affected by the IJEPA between Indonesia and Japan. Independent variables follow the first model. The equation is constructed as follow.

Equation of 4.3.1:

$$FDI_{it} = C + \beta_1.GDP_{it} + \beta_2.CONS_{it} + \beta_3.DIST_{it} + \beta_4.GR_{it} + \beta_5.ER_{it} + \beta_6.POP_{it} + \beta_7.EMPL_{it} \\ + \beta_8.EDU_{it} + \beta_9.ELECONS_{it} + \beta_{10}.FDIPROFIT_{it} + \beta_{11}.DOO_{it} + \beta_{12}.RW_{it} + \beta_{13}.IJEPA_{it} + e_t$$

The model regression of time-series data shown that IJEPA gives positive but not significant effect to FDI inflows of Japan in Indonesia. This result meets the expected hypothesis and the previous study using the RIA method (Verico, 2018) yet insignificance. This hypothetically explains why IJEPA has pros and cons in Indonesia as this agreement was expected to increase the FDI inflows from Japan to Indonesia. Detail result is in **Table 11**.

5. Conclusion

This paper adopted Granger Causality and elasticity measurement and found that Indonesia must have the export orientation as it increased manufacture value-added thus investment inflows both short and long run type. From econometric regression method, this paper found that FDI inflows the Free Trade Agreement (FTA) played significant role in increasing trade and investment. At regional level of ASEAN, this paper applied system equation model of SURE (Seemingly Unrelated Regression Estimator) and SEME TSLS (Simultaneous Equation Model Estimator of Three-Stage Least Square) to assess the impact of FTA in selected five ASEAN member states (Indonesia, Malaysia, Thailand, Philippines, and Vietnam). It found that FTA owned positive and significant impact at 1% on intra-regional FDI inflows yet the opposite on intra-regional trade. This confirmed that ASEAN is on the right track to move from intra-regional trade to intra-regional investment of which indicated that the ASEAN Economic Community is timely. This paper also found that intra-regional trade and intra-FDI inflows have the simultaneous relation in intermediate goods. It indicated that selected five ASEAN members have been using Southeast Asia as the production base to aim foreign market access. Model of PLS FE (Pooled Least Square of Fixed Effect) found that Indonesia is still lag behind in intra-FDI inflows yet not much lag behind in intra-regional trade. As at the bilateral level, this paper found that the IPPTA gives positive and significant impact at 1% to Indonesia's net export over Pakistan. It meets the expected hypothesis while for the IJEPA, the result is positive yet insignificance on Japan's FDI inflows to Indonesia. The latter rang up the alarm that Indonesia has to attract more FDI inflows from Japan. From the FGD session, this study found that the role of FTA center is necessary especially in increasing triple helix connectivity between business people, government officials, and academician. This connectivity will reduce asymmetric information risk between involved countries and within involved government institution from negotiator to related technical ministers.

Appendix

Table 1. RCA (2015) and CMSA (2011-2015) of Indonesia, Malaysia, Thailand, Philippines and Vietnam, HS-2 Code

RCA 2015 CMSA 2011-15 (SCSW)	Indonesia	Malaysia	Thailand	Philippines	Viet Nam
Number of 'Great' Products	21%	13%	20%	21%	23%
LIVE ANIMALS; ANIMAL PRODUCTS	Great (1)			Great (1)	
VEGETABLE PRODUCTS	Great (3)	Great (1)	Great (3)	Great (2)	Great (3)
ANIMAL OR VEGETABLE FATS AND OILS AND THEIR CLEAVAGEPRODUCTS; PREPARED EDIBLE FATS; ANIMAL OR VEGETABLE WAXES				Great (1)	
PREPARED FOODSTUFFS; BEVERAGES, SPIRITS AND VINEGAR; TOBACCO AND MANUFACTURED TOBACCO SUBSTITUTES	Great (4)	Great (2)	Great (6)	Great (2)	Great (1)
MINERAL PRODUCTS	Great (1)	Great (1)	Great (1)	Great (1)	Great (1)
PRODUCTS OF THE CHEMICAL OR ALLIED INDUSTRIES		Great (1)	Great (1)	Great (1)	
PLASTICS AND ARTICLES THEREOF; RUBBER AND ARTICLES THEREOF		Great (1)			
RAW HIDES AND SKINS, LEATHER, FURSKINS AND ARTICLES THEREOF; SADDLERY AND HARNESS; TRAVEL GOODS, HANDBAGS AND SIMILAR CONTAINERS; ARTICLES OF ANIMAL GUT			Great (1)	Great (1)	Great (3)
WOOD AND ARTICLES OF WOOD; WOOD CHARCOAL; CORK AND ARTICLES OF CORK; MANUFACTURES OF STRAW, OF ESPARTO OR OF OTHER PLAITING MATERIALS; BASKETWARE AND WICKERWORK	Great (2)		Great (1)	Great (2)	Great (2)
PULP OF WOOD OR OF OTHER FIBROUS CELLULOSIC MATERIAL; RECOVERED (WASTE AND SCRAP) PAPER OR PAPERBOARD; PAPER AND PAPERBOARD AND ARTICLES THEREOF	Great (1)				
TEXTILES AND TEXTILE ARTICLES	Great (3)		Great (1)	Great (3)	Great (6)
FOOTWEAR, HEADGEAR, UMBRELLAS, SUN UMBRELLAS, WALKING-STICKS, SEAT-STICKS, WHIPS, RIDING-CROPS AND PARTS THEREOF; PREPARED FEATHERS AND ARTICLES MADE THEREWITH; ARTIFICIAL FLOWERS; ARTICLES OF HUMAN HAIR	Great (2)				Great (2)
ARTICLES OF STONE, PLASTER, CEMENT, ASBESTOS, MICA OR SIMILAR MATERIALS; CERAMIC PRODUCTS; GLASS AND GLASSWARE		Great (1)			Great (1)

NATURAL OR CULTURED PEARLS, PRECIOUS OR SEMI-PRECIOUS STONES, PRECIOUS METALS, METALS CLAD WITH PRECIOUS METAL AND ARTICLES THEREOF; IMITATION JEWELLERY; COIN					
BASE METALS AND ARTICLES OF BASE METAL	Great (2)	Great (5)	Great (2)	Great (2)	
MACHINERY AND MECHANICAL APPLIANCES; ELECTRICAL EQUIPMENT; PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS, AND PARTS AND ACCESSORIES OF SUCH ARTICLES			Great (1)	Great (2)	Great (1)
VEHICLES, AIRCRAFT, VESSELS AND ASSOCIATED TRANSPORT EQUIPMENT			Great (1)	Great (1)	
OPTICAL, PHOTOGRAPHIC, CINEMATOGRAPHIC, MEASURING, CHECKING, PRECISION, MEDICAL OR SURGICAL INSTRUMENTS AND APPARATUS; CLOCKS AND WATCHES; MUSICAL INSTRUMENTS; PARTS AND ACCESSORIES THEREOF	Great (1)	Great (1)		Great (1)	
ARMS AND AMMUNITION; PARTS AND ACCESSORIES THEREOF					
MISCELLANEOUS MANUFACTURED ARTICLES			Great (1)		Great (2)
WORKS OF ART, COLLECTORS' PIECES AND ANTIQUES					

Source: Verico, 2017

Table 2. Gini Hirschman Index (GHI) of Indonesia, 2003 and 2016, HS-2 Code

HS2	Product	Value 03	Value 16	Increase/Decrease	GHI 03	GHI 16
15	Animal or vegetable fats and oils	3,003,361,594	18,233,502,524	507%	0.13	0.08
85	Elect. machinery, sound rec., tv, etc.	6,120,599,943	8,160,983,505	33%	0.13	0.09
87	Vehicles other than railway	628,642,366	5,867,784,975	833%	0.10	0.11
64	Footwear; part of such articles.	1,182,185,624	4,639,859,310	292%	0.18	0.11
62	Articles of apparel accessories not knit	2,614,323,346	3,879,772,161	48%	0.30	0.27
03	Fish, crustaceans, molluscs and another invertebrate	1,437,417,174	2,923,655,990	103%	0.24	0.20
29	Organic chemicals	1,225,943,376	2,384,407,263	94%	0.14	0.07
94	Furniture, bedding, lamps illumination signs	1,603,366,713	1,689,165,401	5%	0.11	0.16
16	Prep. of meat, fish, crustaceans, molluscs	118,123,614	940,378,562	696%	0.25	0.26
22	Beverages, spirit and vinegar	24,256,362	177,667,919	632%	0.14	0.14

Source: Author's calculation based on BPS Statistic Data, 2018

Table 3. Most Decreased Product in Volume (Kg), 2003 and 2016, HS-2 Code

Volume in Kg	2003	2010	2016	NOD	Decrease %
Arms and ammunition	451,593	155,483	487	40	0.1%
Umbrellas, whips, walking-sticks	3,215,598	924,714	210,700	103	7%
Railway, tramway track and part	68,797,504	2,403,512	11,410,955	51	17%
Cork and articles of cork	568,025	82,097	97,356	66	17%
Clocks and watches and parts	879,420	240,154	193,752	67	22%
Meat and edible meat offal	12,696,983	5,509,480	3,981,838	39	31%
Silk	188,972	40,280	73,116	33	39%
Dairy produce	56,320,182	49,045,392	24,594,255	105	44%
Raw hides and skins and leather.	8,723,625	7,104,090	3,833,860	67	44%
Manufac. of straw; basket ware	34,463,795	13,414,980	19,305,823	188	56%
Furniture, bedding, lamps illumination signs	870,917,632	768,398,783	488,729,527	237	56%

Source: Author's calculation based on BPS Statistic Data, 2018, *NOD: Number of Destination

Table 4. Selected Economic Cooperation Productivity, 2016

Country	GNI per Capita (US\$ Current)	Population	GDP (US\$ current)	%Pop	%GDP	Productivity
Singapore	56,287	5,469,700	307,871,907,186	0.1%	0.4%	5.25
Brunei	41,344	417,394	17,256,754,269	0.01%	0.02%	3.86
Malaysia	10,933	29,901,997	326,933,043,801	0.4%	0.4%	1.02
Thailand	6,021	67,725,979	407,804,134,912	0.9%	0.5%	0.56
Indonesia	3,665	254,454,778	932,538,201,025	3.5%	1.2%	0.34
Philippines	3,072	99,138,690	304,582,023,121	1.4%	0.4%	0.29
Vietnam	2,262	90,730,000	205,204,652,922	1.2%	0.3%	0.21
Laos	2,358	6,689,300	15,771,725,798	0.1%	0.02%	0.22
Myanmar	1,204	53,437,159	64,330,038,665	0.7%	0.1%	0.11
Cambodia	1,351	15,328,136	20,709,432,403	0.2%	0.03%	0.13
ASEAN	4,176	623,293,133	2,603,001,914,102	9%	3%	0.39
China	8,254	1,364,270,000	11,260,105,247,908	19%	14%	0.77
Japan	38,869	127,131,800	4,941,461,206,885	2%	6%	3.62
South Korea	27,970	50,423,955	1,410,382,943,973	1%	2%	2.61
ASEAN+3	9,337	2,165,118,888	20,214,951,312,868	30%	26%	0.87
India	1,750	1,295,291,543	2,266,902,397,333	17.8%	3%	0.16
Australia	51,244	23,490,736	1,203,770,210,672	0.3%	2%	4.78
New Zealand	41,508	4,442,100	184,384,859,627	0.1%	0.2%	3.87
RCEP	6,843	3,488,343,267	23,870,008,780,500	48%	31%	0.64
TPP with USA	34,673	801,763,700	27,799,656,750,000	11%	36%	3.23
TPP without USA	19,162	478,634,860	9,171,556,740,000	7%	12%	1.79
USA	57,649	323,128,840	18,628,100,010,000	4%	24%	5.38
Russia	9,082	146,000,000	1,326,000,000,000	2%	2%	0.85
EAS	11,074	3,957,472,107	43,824,108,790,500	55%	56%	1.03

Source: Author's calculation based on the WDI Data, 2018

Table 5. Economic Convergence Indication in ASEAN, 2016

Country	GNI per Capita (US\$ Current)	Growth 2016
Singapore	56,287	2%
Brunei	41,344	1.3%
Malaysia	10,933	4.2%
Thailand	6,021	3.2%
Indonesia	3,665	5%
Philippines	3,072	6.9%
Laos	2,358	7%
Vietnam	2,262	6.2%
Cambodia	1,351	7%
Myanmar	1,204	5.9%

Source: Author's calculation based on the WDI Data, 2018

Table 6. Selected Variables, Hypothesis, and Sources of Data for Regional Level Model

Dependent variable	Independent variable	Expected sign	Data source
Aggregate Intra-ASEAN Trade for testing the impact of AFTA on trade creation (IRT)	Value of GDP (GDP)	+	
	Value of Total Consumption (CONS)	+	
	Percentage of Economic Growth (GR)	+	
	Value of Cost to export (DIST)	-	
(The World Integrated Trade Solutions)	Number of Population (POP)	+	The World Bank (World Development Indicator)
	Number of Employed Worker (EMPL)	+	
	Government Expenditure on Education (EDU)	+	
	Electricity Consumption (ELECONS)	+	
Aggregate intra-ASEAN FDI Inflows for testing the impact of AFTA on investment Creation (INTRA FDI)	FDI Profit (FDIPROFIT)	+	
	Real Wage (RW)	+	
	Exchange Rate (ER)	+	
	Degree of Openness (DOO)	+	The World Integrated Trade Solutions (WITS)
	Intra-Regional Trade (IRT)	+	
(ASEAN Statistic database)	Intra-Regional Investment (INTRA FDI)	+	ASEAN Statistic database
	Dummy Five ASEAN FTA: 0 for year before 2010; 1 for year after 2010	+	

Source: Author's Hypotheses

Table 7. Selected Variables, Hypothesis, and Sources of Data for Bilateral Level Model

Dependent variable	Independent variable	Expected sign	Data source
Net export of Indonesia from trade with Pakistan (NETEXPORT) (The World Integrated Trade Solutions)	Value of GDP (GDP)	+	The World Bank (World Development Indicator)
	Value of Total Consumption (CONS)	+	
	Percentage of Economic Growth (GR)	+	
	Value of Cost to export (DIST)	-	
	Number of Population (POP)	+	
	Number of Employed Worker (EMPL)	+	
	Government Expenditure on Education (EDU)	+	
	Electricity Consumption (ELECONS)	+	
	Real Wage (RW)	+	
	Exchange Rate (ER)	-	
Bilateral FDI Inflows from Japan in Indonesia (FDI) (Japanese Trade and Investment Statistic)	FDI Profit (FDIPROFIT)	+	The World Integrated Trade Solutions (WITS)
	Degree of Openness (DOO)	+	
	Dummy BFTA: IJEPA: 0 for year before 2008; 1 for year after 2008 IPPTA: 0 for year before 2013; 1 for year after 2013	+	

Source: Author's Hypotheses

Table 8. The SURE and SEME on Intra-Regional Trade and Intra FDI Inflows of Five ASEAN Members

VARIABLES	Seemingly Unrelated Regressions Estimator (SURE)		Simultaneous Equation Model Estimator (SEME/3 SLS)	
	Intra-Regional Trade (IRT) Dependent variable (Log)	Intra-Regional FDI Inflows (INTRAFDI) Dependent variable (Log)	Intra-regional Trade (IRT) Dependent variable (Log)	Intra-regional FDI Inflows (INTRAFDI) Dependent variable (Log)
Log GDP	-0.283*** (0.0470)	2.085*** (0.294)	-0.211*** (0.0477)	1.902*** (0.295)
Log DIST	-0.166*** (0.0360)	0.848*** (0.254)	-0.170*** (0.0360)	0.496* (0.257)
Log INTRAFDI	0.120*** (0.0108)	<i>Irrelevance</i>	0.0746*** (0.0120)	<i>Irrelevance</i>
Log RW	0.299*** (0.0273)	-1.801*** (0.208)	0.272*** (0.0275)	-1.346*** (0.214)
Log CONS Lag (-1)	0.142*** (0.0402)	-1.051*** (0.262)	0.106*** (0.0405)	-0.959*** (0.263)
FTA	-0.275*** (0.0564)	2.067*** (0.358)	-0.199*** (0.0571)	1.919*** (0.358)
Log IRT	<i>Irrelevance</i>	5.302*** (0.476)	<i>Irrelevance</i>	3.304*** (0.532)
Constant	-1.164 (0.846)	2.165 (5.703)	-1.659* (0.849)	-2.784 (5.733)
Observations	118	118	118	118
R-squared	0.469	0.450	0.525	0.509

*Robust standard errors in parentheses. Source: Author calculation, ***significance at 1%, **significance at 5%, and *significance at 10%, 2018*

Table 9. Pooled Least Square Fixed Effect (PLS FE) of Intra-Regional Trade and Intra FDI Inflows of Five ASEAN Members

VARIABLES	Fixed Effect	
	Intra-Regional Trade (IRT)	Intra-Regional FDI Inflows (INTRA FDI)
	Dependent variable (Log)	Dependent variable (Log)
Log GDP	0.157 (0.216)	5.183*** (1.052)
Log DIST	-0.174*** (0.0570)	0.273 (0.319)
Log Intra FDI	0.0558*** (0.0171)	<i>Irrelevance</i>
Log RW	-0.297 (0.251)	-4.569*** (1.289)
Log CONS	0.0734* (0.0384)	-0.225 (0.209)
FTA	-0.0305 (0.0661)	0.233 (0.356)
Malaysia	1.070** (0.539)	9.274*** (2.817)
Philippines	0.273 (0.249)	3.321** (1.311)
Thailand	0.579** (0.262)	4.707*** (1.371)
Vietnam	0.00158 (0.180)	5.206*** (0.829)
Log IRT	<i>Irrelevance</i>	1.620*** (0.497)
Constant	-4.248 (3.564)	-89.98*** (17.27)
Observations	118	118
R-squared	0.633	0.751

*Robust standard errors in parentheses. Source: Author's calculation, ***significance at 1%, **significance at 5%, and *significance at 10%, 2018*

Table 10. Model of IPPTA (Net Export) of Indonesia – Pakistan Trade

VARIABLES	Net Export
	Dependent variable (Log)
Log GDP	5.559*** (1.010)
Log DOO	-4.896*** (0.991)
Log ER	5.438*** (0.769)
IPPTA	0.902*** (0.221)
Constant	-17.39*** (4.167)
Observations	22
R-squared	0.892

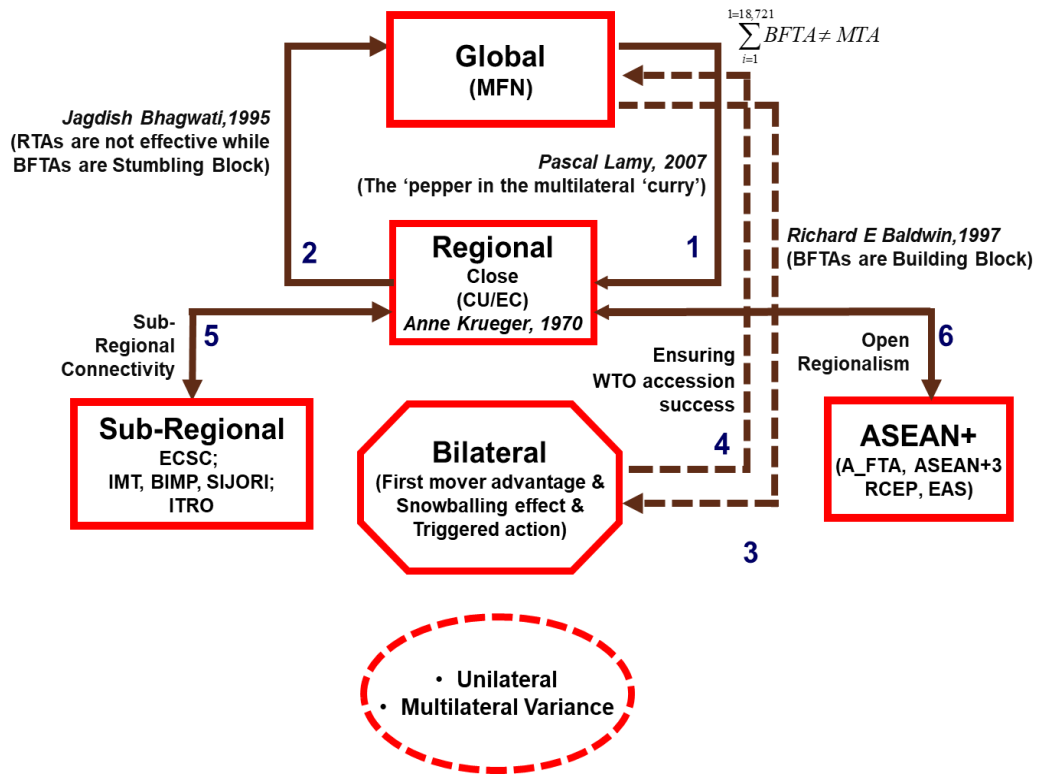
*Robust standard errors in parentheses. Source: Author's calculation, ***significance at 1%, **significance at 5%, and *significance at 10%, 2018*

Table 11. Model of IJEPA (FDI Inflows) of Japan in Indonesia

VARIABLES	FDI Inflows Dependent variable (Log)
Log GDP	7.444*** (2.317)
Log DIST	-2.027* (1.141)
Log CONS	-7.101*** (2.240)
Log ER	-1.011*** (0.275)
IJEPA	0.158 (0.569)
Constant	25.21** (8.780)
Observations	23
R-squared	0.647

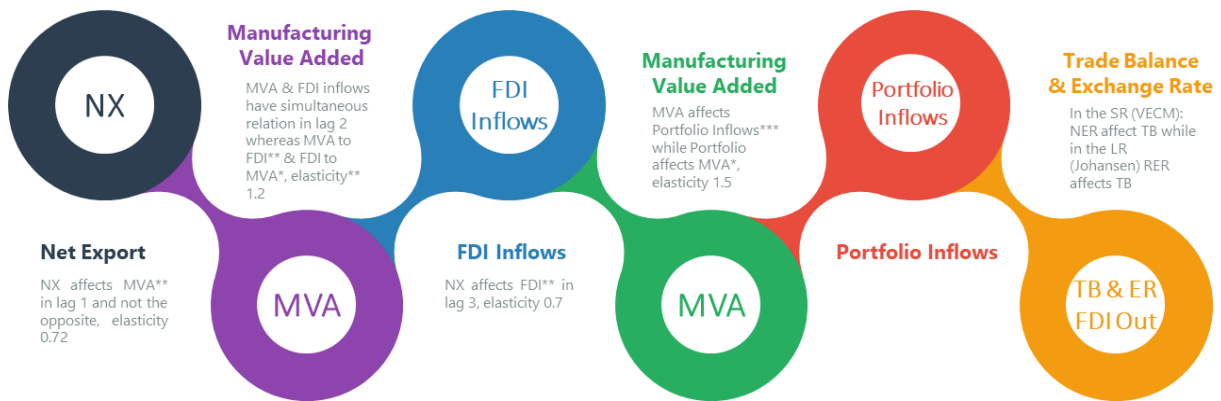
*Robust standard errors in parentheses. Source: Author calculation, ***significance at 1%, **significance at 5%, and *significance at 10%, 2018*

Diagram 1. Economic Cooperation Options



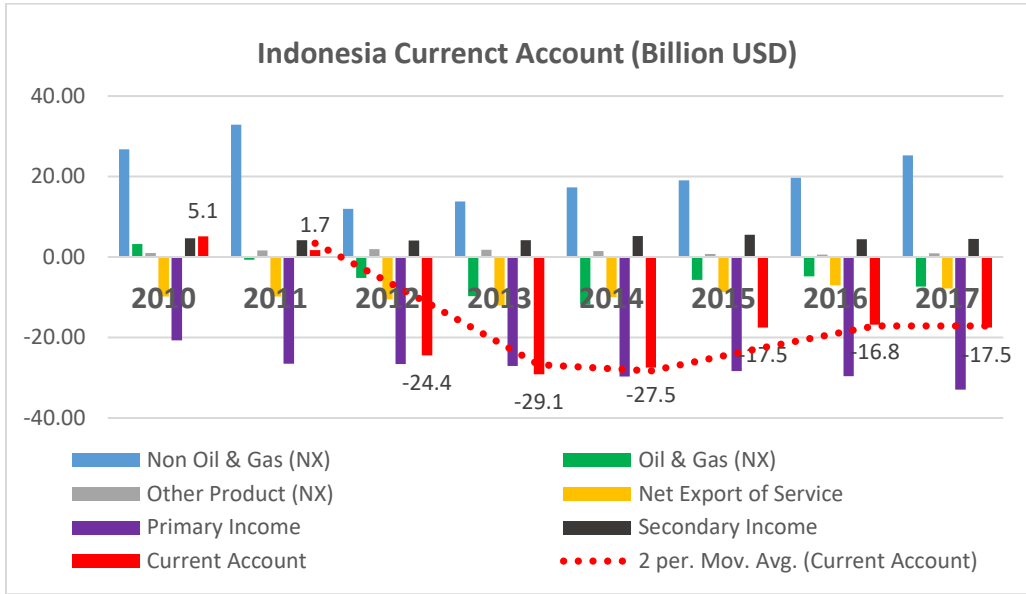
Source: Verico, 2017

Diagram 2. Granger Causality & Elasticity of Net Export, Manufacture Value Added & Investment



Source: Verico, 2018

Figure 1. Indonesia's Balance of Payment, 2010 - 2017



Source: Author's Illustration based on BI Statistic Data, 2018

Figure 2. Indonesia's Export Destination, 2016, HS-2



Source: Author's Illustration based on BPS Statistic Data, 2018

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