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# AEC 2015 and Beyond: Realizing ASEAN Value Chain

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## Abstract

The integration of the ASEAN (Association of South East Asia Nations) into economic community aims to establish a single market and production base, a competitive region, a region with equitable economic development and a region integrated into the global economy. While current analyses mainly highlight on opportunities and threats of the implementation of ASEAN Economic Community (AEC) and its impact upon domestic economy of its member countries, the paper suggests a shift of analysis beyond 2015 toward the competitiveness of the AEC and its members in facing other regions and countries in global economy. Thus the main issue and challenge is how the divergent socio-economy of the AEC members becomes strength rather than weakness in a formation of the ASEAN value chain. The ASEAN value chain recognizes a fragmentation and integration of economic activities at the same time which requires a division of role and labor between the AEC member countries. Individual members of the AEC do not need to undertake the full range of value chains but takes part in particular tasks/activities/functions in which the country has comparative and competitive advantages. By realizing the ASEAN value chain, it will widely open opportunities for its member countries to fully join the economic community, to improve competitiveness through human capital and capability, and to capture increase share of value added created domestically through an upgrading toward high-skill content activities over time.

**Keywords:** AEC, global value chains, governance, upgrading
**JEL Classifications:** F13, F15, F42, F53, O24, O53

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## 1. Introduction

Member of the ASEAN has a commitment to start integrating its economy into community (AEC) starts in 2015. The implementation of AEC follows the AEC Blueprint agreed in 2007 that sets 4 areas of objective (i.e. 4 pillars): (i) a single market and production base, (ii) a highly competitive economic region, (iii) a region of equitable economic development, and (iv) a region fully integrated into the global economy. Each pillar consists of several core elements; for instance, the objective of single market and production base will be achieved through a free flow not only goods, services, investment and capital, but also skilled labor (ASEAN, 2015). Due to divergent socio-economic condition between its members, the success of the AEC implementation will highly depend on the political and socio-economic realities of the member countries. In this regard the ASEAN has developed a scorecard in order to monitor progression and readiness of its member countries toward a fully implementation of the AEC. The AEC scorecard is developed to serve as an unbiased assessment tool to measure the economic health of the ASEAN and the extent of integration among the ASEAN members. With this background, current analysis more focuses on the harmonization of various policies and regulations in process of creating common rules of game within the AEC as reflected on the scorecard. For instance, the government of Indonesia (GOI) reports that Indonesia's scorecard until August 2014 has achieved 85.5% higher than the overall ASEAN scorecard at 82.1%. It is indicated by a ratification of 115 out 138 the ASEAN economic agreements covering trade in goods and services and investment. Nevertheless, while the GOI put effort to improve the scorecard by undertaking specific action to be done, other economic actors have a little understanding about the scorecard and the preparation made by the GOI to ensure Indonesia be ready for the AEC implementation. Discussion between economic scholars and business practitioners focuses more on opportunities and threats of the implementation of the AEC and its impact on domestic economy. Specifically, they discuss on whether domestic producers and labors are able to compete with their counterparts from other ASEAN in both Indonesia and ASEAN-wider market.

The implementation of the AEC is not isolated from the dynamics of globalization that will have an impact on the achievement of the objectives of the AEC Blueprint particularly to establish a production base and to integrate the region into the global economy. Globalization has made economic activities fragmented and integrated in the same time within a complex network involving a number of firms/industries/countries/regions around the globe.Consequently the implementation of AEC and its success post-2015 should be addressed within this context of global network. While some emerging economies, particularly China, continue to power ahead, the competitiveness of the ASEAN members at the global economy is questionable. For instance, in 2013 China accounts for 11.7% of world total merchandise export, while the contribution of ASEAN (notably Singapore, Malaysia, Thailand, Indonesia and Viet Nam) is 5.3% (WTO, 2014). The success of China comes from its fully participation in the complex global network

namely global value chains (GVCs). Futhermore, the country does not stop at the integration into GVCs, but China is able to move farther by upgrading its economic capacity and capability over time.

Based on those facts, the primary objective of this paper is to overview the performance of intra- and extra-ASEAN trade and its likely impact on the fully implementation of the AEC. It then goes on to understand the implementation of the AEC in the context of GVCs. In order to meet the objective, the paper will address some questions as followed:

- How important is the intra- and extra-ASEAN trade?
- To what extent is the ASEAN member countries integrate into GVCs?
- What are challenges of the implementation of the AEC in the context of GVCs dynamics?

In order to answer the questions, the paper discusses the dynamics of global economy mainly based on a survey of the extensive relevant literature on GVCs. Meanwhile, macroeconomic data related to this subject gathered from various public sources.

## 2. Literature Reveiwe: The Changing Nature of Global Economy

The AEC is not isolated from the dynamics of the world economic system in which pressures and challenges of globalization will have an impact on success and failure of AEC in achieving its objectives. For this regard, the implementation of the AEC should take into account the fundamental changes of global industrial organization, investment and trade.

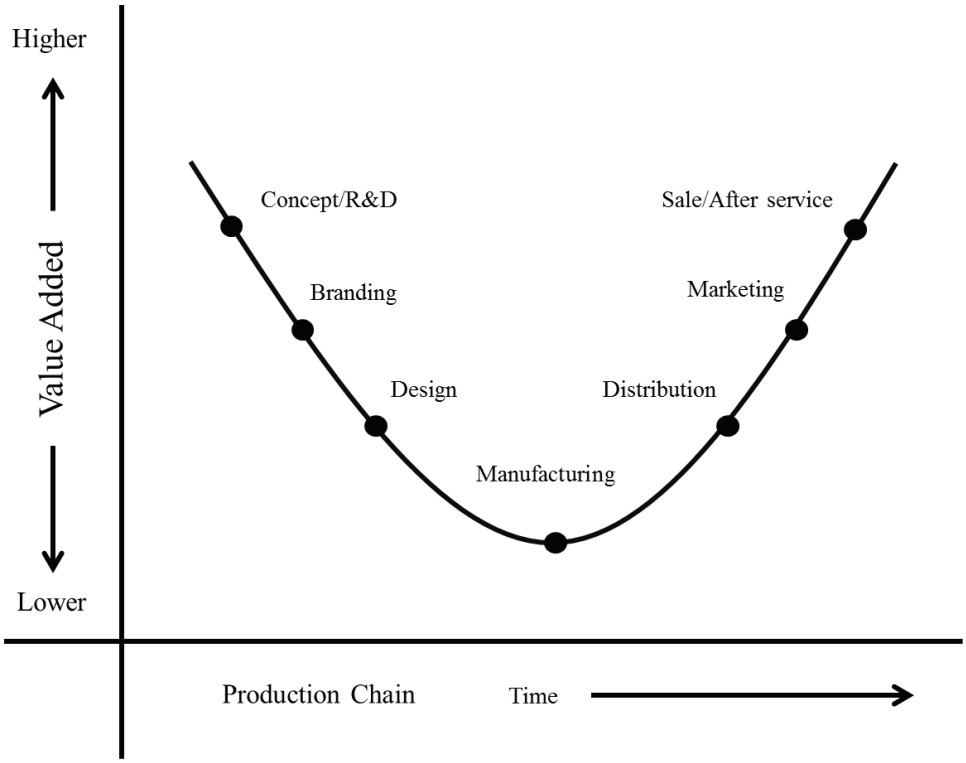
Global economy has been changing dramatically since the 1990s through the evolution of global value chains (GVCs). Globalization is distinguished from internationalization in which the latter refers to the extension of economic activities across the boundary of a country through exports and imports, while the former covers not only activities across the border but also organization and integration of diverse value added activities scattered around the globe (Dicken, 1998).

Globalization of value chain is driven by liberalization and deregulation of global trade and investment as well as the advancement of technology particularly transportation, communication and information. GVCs recognize the fragmentation of value chain performed by different independent firms located within countries around the world and the integration of value chains in a network system in the same time. Individual firms around the globe are able to participate in the GVCs by undertaking particular value added activities in which they have comparative and competitive advantages. Therefore the participation of countries in GVCs is a necessary condition to shape economic development of the countries through a creation of employment and productivity. GVCs framework has four dimensions of analysis: (i) the geographical

configuration, (ii) the governance structure, (iv) the input-output structure and (iv) the social and institutional environment in which the chain operates (Gereffi, 1994). Nevertheless, the governance structure has been explored and analyzed extensively due to its significant role played in influencing upgrading processes of firms, industries and countries over time.

A governance structure refers to power relations between GVCs leaders and supplier firms within the chains. The leaders control and coordinate the supplier firms in undertaking particular value added activities within their chains to accomplish the whole value chains in efficient and effective manner. The extent of control of the leaders is highly dependent on three main factors: (i) the complexity of information and knowledge required to sustain a transaction between the leaders and supplier firms, particularly with respect to product and process specification, (ii) the extent to which this information and knowledge can be codified, and therefore transmitted efficiently and without transaction-specific investment between the parties to the transaction, (iii) the capability of actual and potential supplier firms to meet requirements of the transaction (Gereffi et al., 2005). Based on a combination of these determinant factors and 'low/high' categorization implies on a new divide in global industrial organization in which the traditional structure of hierarchy (i.e. foreign direct investment) and arm's length market is augmented by a network system (i.e. modular, relational and captive value chains). The different value chains governance brings about the divergent extent of upgrading process and outcome. In the other words, the structure of value chains in which firms/countries are involved is a sufficient condition to capture more gain through an increase in value added. Firms are increasing value added through a shift from lower-skill to higher-skill activities. Literature (see Humphrey & Schmitz, 2002 and Kaplinsky, 2005), has distinguished value chain into: (i) process upgrading, (ii) product upgrading, (iii) functional upgrading and (iv) inter-sectoral/chain upgrading. Functional upgrading is assumed to be he ultimate objective to be achieved by firms; because firms perform complex tasks and activities that requires a set of high skill. By using illustration of 'smiling' curve (Shih, 2005) shown in Figure 1, functional upgrading simply takes place through a movement along the value chains that is from manufacturing activities (where process and product upgrading naturally takes place) toward concept/R&D, design, branding or/and toward distribution, marketing or sales/after service.

Figure 1 Stan Shih's smiling curve




Source : Author's Illustration

## 3. Intra- and Extra-ASEAN trade: Potential for Regional Production Base

Section 2 has explored the literature on dynamics of globalization of value added activities and its implication on development particularly in developing countries. This section aims to provide a general picture of intra- and extra-ASEAN trade at the aggregate level to look at potential for establishment of regional production base. The data covers time series from 2010 to recent available period and a comparison across country between Indonesia and other ASEAN and rest of world as well. GVCs naturally involve a great number of firms to perform particular interconnected tasks and functions in order to accomplish the whole value chains. Therefore GVCs shift international trade from trade in final goods to trade in tasks/functions represented by trade in intermediate goods.

Definition of intermediate goods used in this paper is following the construct developed by Gaulier et al (2005). The intermediate goods are consisted of semi finished goods and parts and components and they are classified by UN's BEC (Broad Economic Categories) as followed:

Table 1 Definition of intermediate goods

| 3 stages | 5 stages | BEC | Title |
|---|---|---|---|
| Primary goods | | 111 | Foods & Beverages, primary, mainly for industry |
| | | 21 | Industrial supplies not elsewhere specified, primary |
| | | 31 | Fuels & lubricants, primary |
| Intermediate goods | Semi finished goods | 121 | Foods & beverages, processed, mainly for industry |
| | | 22 | Industrial supplies not elsewhere specified, processed |
| | | 32 | Fuels & lubricants, processed |
| | Parts and components | 42 | Capital goods (except transport equip), parts and |
| | | 53 | accessories |
| | | | Parts and accessories transport equipment |
| Final goods | Capital goods | 41 | Capital goods (except transport equip) |
| | | 521 | Other industrial transport equipment, parts and accessories |
| | Consumption goods | 112 | Foods & beverages, primary, mainly for household consumption |
| | | 122 | Foods & beverages, processed, mainly for household consumption |
| | | 51 | Passenger motor cars |
| | | 522 | Other non industrial transport equipment, parts and accessories |
| | | 61 | Durable consumer goods not elsewhere specified |
| | | 62 | Semi-durable consumer goods not elsewhere specified |
| | | 63 | Non-durable consumer goods not elsewhere specified |

Source: Appendix 2, Gaulier et. al., 2005, pp. 47

Table 2 shows that Indonesia's export and import in intermediate goods among ASEAN (i.e. Singapore, Malaysia, Philippines, Thailand, Brunei Darussalam, Viet Nam, Cambodia, Myanmar and Lao PDR) is growing. During the period of 2010-2014, the trade in intermediate goods grows by 8.2% per annum that is faster than its trade with the rest of world.

Table 2 Indonesia's trade in intermediate goods (in $ million)

| | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|
| **Exports** | | | | | |
| Intra-ASEAN | 17,339.70 | 21,298.00 | 19,878.10 | 19,668.50 | 19,586.90 |
| Extra-ASEAN | 57,442.20 | 76,520.80 | 70,028.00 | 66,141.20 | 67,263.00 |
| **Imports** | | | | | |
| Intra-ASEAN | 26,956.30 | 37,115.00 | 40,511,8 | 41,730.80 | 39,094.20 |
| Extra-ASEAN | 56,667.20 | 73,160.00 | 80,410.50 | 77,033.70 | 74,032.10 |
| **Trade** | | | | | |
| Intra-ASEAN | 44,296.00 | 58,413.00 | 60,389.90 | 61,399.30 | 58,681.10 |
| Extra-ASEAN | 114,109.40 | 149,680.80 | 150,438.50 | 143,174.90 | 141,295.10 |

Source: UN Comtrade (calculated)

Based on the trade pattern in intermediate goods of Indonesia among other ASEAN members, it suggests the emergence of a regional production base in ASEAN. ASEAN increasingly trades in intermediate goods among them that are required to produce final goods. However, the objective of AEC is not only the establishment of a regional production base but also a region with high competitiveness and fully integrated into global economy. Competitive AEC requires its member to innovate and upgrade continuously. It needs more than arm's length transaction in intra-ASEAN trade, it requires a network relationship among ASEAN members. AEC also needs to form relationship with global economic actors.

## 4. Integration Into Global Economy: Indicators of ASEAN

Section 3 has explored the trade pattern in intermediate goods intra- and extra-ASEAN that indicates a potential for ASEAN to establish a regional production base. This section aims to provide the extent of ASEAN integration into global economy based on the trade in value added. Data of trade in value added is more relevant than gross trade since it accounts for value that is added and captured by industries/countries in producing goods and services for export. It recognizes that a country's production and export of final goods increasingly relies on imported intermediate goods. It also reveals the significant contribution of services in production and export of final goods (OECD-WTO, 2016).

Table 3 Value added export ratio (% of export)

| | 2000 | 2005 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|
| **ASEAN** | | | | | | |
| Indonesia | 82.63 | 83.44 | 85.38 | 88.92 | 88.92 | 88.03 |
| Singapore | 54.67 | 60.21 | 62.53 | 58.15 | 58.68 | 58.19 |
| Malaysia | 52.27 | 54.05 | 58.77 | 59.96 | 58.27 | 59.38 |
| Philippines | 66.95 | 62 | 68.07 | 72.95 | 72.28 | 76.42 |
| Thailand | 68.08 | 63.16 | 60.75 | 65.42 | 63.43 | 61.01 |
| Brunei | 94.63 | 95.35 | 96.23 | 94.74 | 95.48 | 95.73 |
| Viet Nam | 73.06 | 69.25 | 64.58 | 67.15 | 65.29 | 63.74 |
| Cambodia | 63.01 | 57.79 | 57.98 | 64.97 | 62.62 | 63.18 |
| **East Asia** | | | | | | |
| China | 62.72 | 62.57 | 68.23 | 69.18 | 68 | 67.84 |
| Korea | 70.23 | 66.98 | 58.24 | 62.47 | 60.76 | 58.3 |
| Japan | 92.6 | 88.88 | 84.23 | 88.8 | 87.27 | 85.32 |

Source: Statistics OECD Trade in Value Added – October 2015

Table 3 and 4 illustrates statistics on trade in value added in which the domestic value added embodied in export measures how much value added is generated by ASEAN member countries for a given unit of exports. Meanwhile, the domestic value added of service embodied in export measures the real underlying contribution made by service sector to export. Table 3 and 4 demonstrates different specialization of value added activities undertaken by ASEAN members. In 2011, Indonesia's domestic value added content of its exports is 88% the second highest in ASEAN after Brunei, while Singapore has the lowest domestic value added created in its export. The higher ratio indicates lower foreign content thus the lower importance of imports to Indonesia's and Brunei's exports. Nevertheless, it also indicates a relatively lower degree of fragmentation of domestic value chains for Indonesia and Brunei in which a higher proportion of tasks necessary to produce exports are undertaken within domestic firms/industries rather than across firms/industries in other countries. Moreover, the high share also indicate that the exports of Indonesia and Brunei rely more on raw materials and inputs which naturally have less value added generated domestically (e.g. oil and gas, mining).

The description of domestic value added of Indonesia and Brunei clearly confirms by a relatively low share of domestic value added service sector in export. The service sector of Indonesia and Brunei accounts for only 24.3% and 8% of exports respectively in 2011 and so the lowest in ASEAN. The lower ratio reflects a higher degree of specialization in activities with typically low services content (i.e. manufacturing) or it also indicates that Indonesia and Brunei are not able to capture the shift of global outsource from manufacturing to services (e.g. professional and business services).

Table 4 Service value added embodied in gross exports (% of export)

| | 2000 | 2005 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|
| **ASEAN** | | | | | | |
| Indonesia | 25.4 | 25.51 | 23.87 | 24.76 | 24.51 | 24.28 |
| Singapore | 33.5 | 40.02 | 46.06 | 41.73 | 41.68 | 41.77 |
| Malaysia | 21.31 | 20.86 | 22.33 | 25.4 | 23.82 | 23.95 |
| Philippines | 28.06 | 29.81 | 33.2 | 37.65 | 36.03 | 39.57 |
| Thailand | 31.82 | 28.76 | 26.48 | 28.95 | 27 | 26.23 |
| Brunei | 9.47 | 7.45 | 6.75 | 9.59 | 8.92 | 7.98 |
| Viet Nam | 8.13 | 25.16 | 22.54 | 24.92 | 24.41 | 23.2 |
| Cambodia | 34.48 | 33.72 | 32.76 | 38.34 | 36.11 | 35.47 |
| **East Asia** | | | | | | |
| China | 23.59 | 24.24 | 26.62 | 28.55 | 27.83 | 27.65 |
| Korea | 33.86 | 30.31 | 27.75 | 28.74 | 26.7 | 25.27 |
| Japan | 47.14 | 46.5 | 45.19 | 48.1 | 44.1 | 44.36 |

Source: Statistics OECD Trade in Value Added – October 2015

The elaboration of trade relations between countries into intermediate and final goods as well as domestic value added and imports also brings about a new measurement of the extent of country's involvement in GVCs (i.e. GVCs participation index). The index is measured as the ratio of a foreign inputs/value added (i.e. imports) used in a country's own exports (an upstream links or backward participation) and also the domestic value added supplied to other countries' exports (a downstream links or forward participation) (De Backer & Miroudot, 2012). For the interests of domestic economic development, the forward participation generates positive results as it implies domestic value.

Table 5 GVCs participation index

| | 2000 | 2005 | 2008 | 2009 |
|---|---|---|---|---|
| **Total participation index** | | | | |
| Indonesia | 43 | 49.2 | 49.2 | 43.7 |
| Singapore | 69.4 | 74.8 | 74.3 | 70.7 |
| Malaysia | 62.6 | 68.7 | 67.7 | 65.6 |
| Philippines | 63.2 | 74.3 | 72.8 | 66.6 |
| Thailand | 49.1 | 55.9 | 56.4 | 52.8 |
| Brunei | 40.3 | 45.4 | 51.8 | 43.7 |
| Viet Nam | 47.6 | 52.9 | 56.3 | 51.3 |
| Cambodia | 43.3 | 42.7 | 40.9 | 40.3 |
| **Backward participation index** | | | | |
| Indonesia | 19.3 | 17.8 | 17.4 | 14.4 |
| Singapore | 50.7 | 52.3 | 53.4 | 49.9 |
| Malaysia | 43 | 41.5 | 38.1 | 37.9 |
| Philippines | 45.9 | 45.6 | 41.7 | 38.4 |

| | 2000 | 2005 | 2008 | 2009 |
|---|---|---|---|---|
| Thailand | 34.8 | 38.5 | 37.8 | 34.5 |
| Brunei | 10.4 | 6.7 | 8.8 | 11.6 |
| Viet Nam | 29.6 | 35 | 39.8 | 36.6 |
| Cambodia | 34.6 | 37.9 | 36.1 | 34.1 |
| **Forward participation index** | | | | |
| Indonesia | 23.7 | 31.4 | 31.8 | 29.3 |
| Singapore | 18.6 | 22.4 | 20.9 | 20.7 |
| Malaysia | 19.6 | 27.2 | 29.6 | 27.7 |
| Philippines | 17.3 | 28.7 | 31.1 | 28.3 |
| Thailand | 14.3 | 17.4 | 18.7 | 18.3 |
| Brunei | 29.9 | 38.6 | 43 | 32.2 |
| Viet Nam | 18.1 | 17.8 | 16.5 | 14.7 |
| Cambodia | 8.7 | 4.8 | 4.8 | 6.3 |

Source: Statistic OECD Global Value Chains indicators – May 2013

GVCs total participation index of ASEAN differs from country to country in which Indonesia, Brunei and Cambodia has lower index, while Singapore, Malaysia and Philippines has higher index. In 2009 Indonesia's and Brunei's total participation index is 43.7 while Cambodia is 40.3 that are much lower than Singapore's index of 70.7. The low total participation index indicates that the countries have a limited integration in global economy. Although Indonesia's and Brunei's backward participation index is the lowest among ASEAN members, however their forward participation index is much higher than other ASEAN members. This indicates their high importance of domestic value added embodied in other countries' exports. As result, this contributes positively to their economic development through its creation of domestic value added. Nevertheless, this again indicates that Indonesia and Brunei exports raw materials for further processing in the third countries within GVCs.

## 5. GVC Governance and Upgrading Dynamics: Indonesia Firm-Level Case

Section 4 has provided a picture of overall performance of ASEAN within GVCs at the aggregate level by using a set of key statistics. This section analyses firm- and industry-level to provide upgrading dynamics and their governance within GVC by taking Indonesia's electronics as case study (see also Kadarusman, 2010, Kadarusman & Nadvi, 2013). By analyzing firm- and industry-level it demonstrates that upgrading processes and competitiveness take place within GVC and beyond relationship with GVC as well.

Empirical evidence has demonstrated successful cases of firms, industries and countries through their integration into GVCs (see for instance Tewari, 1999; Navas-Aleman, 2011). Engagement in GVCs is seen as a necessary condition for firms

and industries particularly from emerging countries to become globally competitive through upgrading processes. Nevertheless, it is not the whole stories of GVCs. Some other cases indicate a downgrading instead of upgrading results in an exploitation of factors of production (e.g. labor, natural resources) of emerging countries (Ponte & Ewert, 2009; Rabellotti, 2001). Many firms of emerging countries are able to reach mastery in manufacturing process to produce products (i.e. process and product upgrading) but then fail to progress toward product design and development (i.e. functional upgrading).

Electronics industry in Indonesia has engaged in GVCs since the 1970s when the Government of Indonesia (GOI)'s adopts import substitution industrialization. The GOI encourages the domestic manufacturing firms to produce electrical equipments and electronics in supplying domestic market. The GOI limits imports of final products (completely built-up/CBU) by applying high tariff (i.e. 2-50%) and non tariff barriers (e.g. a negative import list, approved importation and sole agency system (Thee & Pangestu, 1998). Attracting by huge potential of Indonesia's market while local firms has little production capability and experience thus global electronics brands particularly from Japan come in by establishing joint ventures or technical cooperation with local firms (e.g. National/Panasonic-Gobel, Sharp-Yasonta). In the early development, the joint venture or technical cooperation firms produce mostly mature consumer electronics including televisions, video recorders, radio/tapes recorders and refrigerators mostly to sell in domestic market (Thee & Pangestu, 1998).

A new era of Indonesia's electronics industry starts in 1985, when the GOI's industrial policy shift toward export orientation policy. The GOI reduces import tariffs on final products and intermediate goods (parts and components) as well. The GOI also develops export processing zones (EPZs), bonded zones and provids export processing entrepot (EPE) status[1] to promote exports. During this time, many of the FDI particularly from Korea enter to Indonesia and establish production facilities. Because of high-quality components are yet produced domestically, the global brands import the majority of parts and components and designate Indonesia as assembly operation (Original Equipment Assembly).

In the mid1990s, tariffs of electronics are cut further after the GOI signs up to the AFTA. Consequently, the AFTA brings about a consolidation of global electronics brands operating in ASEAN. They designate few production centre around ASEAN according to the country's comparative advantages in order to achieve both economies of scale and economies of scope regionally (for instance Panasonic designates Indonesia in producing small refrigerators while Thailand produces large refrigerators).

[1] When a firm obtains EPE status, it does not have to go through customs or pay import tariffs for its imported inputs. Moreover, a firm can obtain this status without being located in existing bonded zones. The firm can also sell up to 25 per cent of its products to the domestic market after paying tariffs on thle e inputs and the value added tax on the product (Pangestu, 1997).

The emergence of China in global electronics industry in 1990s also affects the development of the Indonesia's electronics industry. The China's electronics producers sell unbranded final products to Indonesia and sold them under brand names of local retailing firms. In other word, China's firms do not establish production facilities in Indonesia to contrast with Japan's or Korea's first movers.

Currently the Indonesia's electronics industry is comprised of several medium- to large-sized firms dominated by global brands. The case of Polytron (Appendix) illustrates Indonesia's firm that is able to reach functional in generating high-tech electronic products under its own original designs, technology and brands. Furthermore, Polytron's case also describes how the firm acquire knowledge and develop its innovative capability over time.

Polytron realizes that mobile phones and computer tablets have different challenges compared with the mature consumer electronics. The crucial issue is not the product but production particularly in relation to planning and logistics because the product deals with many and various component and technology suppliers. In addition, while the major cost of mature electronics comes from price of material/molding, the cost of mobile phones and computer tablets comes from price of knowledge, technology and patents which is subject to fast-obsolescence. Marketing strategy is also more challenging due to a severe competition from established global brands particularly from Korea and Taiwan.he R&D activities of Polytron have generated 38 technology patents registered in Indonesia, Canada and the US. In addition, Polytron has obtained many awards from the GOI including the Indonesian Good Design on various products and the Company Most Contributing to Technology Development. In domestic market, products of Polytron are frequently nominated as the best seller by domestic or international marketing research firms beating Japanese and Korean brands competitors.

Drawing on case study evidence from the Indonesia's electronics firm and industry shows that the extent of upgrading and innovation processes undertaken by firms and industries is often conditioned by the nature of governance structure within GVCs. Furthermore, experience of the electronics industry indicates that the engagement in GVCs is more conducive to the achievement of process and product upgrading. Indonesia's firms obtain support from global electronics brands in selecting, acquiring, operating and managing production activities. Nevertheless the case of Polytron demonstrate that to achieve functional upgrading it relies on its own efforts and capability with little assistance from GVCs leaders.

## 6. Realizing ASEAN Value Chain

Section 5 has provided upgrading dynamics of electronics industry and firm in Indonesia in context of GVC governance. This last section is trying to address issues of AEC Blueprint implementation using the framework of GVC by focusing the analysis on upgrading processes and governance structure. GVC's framework implies a shift in the nature of global competitiveness in which it depends on how effective and efficient value

chains are coordinated among their participating firms and countries to ensure the whole value chains timely accomplished and delivered. This is the key in making decision on production and value added activities offshoring and outsourcing around the globe. Regional economic integration such as the AEC will not automatically attract global production outsourcing and strengthen its integration into global economy without any significant contribution in supporting value chains in which the AEC inserted. This may explain why not all ASEAN members have fully integrated into GVCs as clearly indicated in section 4.

Furthermore, the AFTA's failure to success in facilitating the free flow of goods within ASEAN may also happen again in the case of AEC unless the AEC is supplemented by a framework reflects a current shift in global economy. Therefore, the paper suggests the AEC implementation should take into account GVCs framework in defining the means and action plan to achieve the goals. More specifically, the paper argues that the implementation of AEC should move toward a formation of regional value chain within the South East Asia. There are two key issues in realizing regional value chain: (1) governance by creating equal power relationship among AEC member countries as well as between AEC and global actors; and (2) upgrading by acquiring new knowledge and forming innovative capability.

In the context of value chain governance; first, factors other than quality-price-delivery including private standard and codes of conduct become most importance in coordinating actors involved in GVC. The AEC should generate common standards applied by its member countries to ease coordination. AFTA has succeeded in reducing tariff significantly but it has failed in improving custom procedures, dispute settlement mechanism, Rule of Origin and removal non tariff measures among ASEAN (Soesastro, 2005). The harmonization of standards among AEC member countries is a necessary condition particularly to become a production base. It aims to create common standards by minimizing redundant or conflicting standards adopted by the member countries. The standards harmonization is on progress and is monitored by a scorecard developed by AEC to track the achievement according to the AEC Strategic Schedule. The next steps after the common standards have been established, AEC should separate three form of powers: legislative (setting standards governing the AEC), judicial (monitoring conformance to the standards) and executive (providing assistance to member countries to meet the standards).

In the context with global actors, the common standards in AEC should also align itself with not only international standards (e.g. set by ISO) but also private standards developed by global corporations and civil society organizations (CSOs). Most importantly, the common standards in AEC should be acknowledged by global actors. Experiences from Indonesia's electronics industry have demonstrated the problem of local firms in complying with international standards and certification such as Restriction of Hazardous Substances (RoHS) adopted by European Union.

Second, the establishment of common standards should protect the AEC's interest rather than individual member country. Standards are not free from manipulation, power struggles and opportunistic behavior. The formation of common standards should not aim to form inclusion and exclusion threshold for fully joining the AEC but it encourages any member country to achieve the standards through continuous improvement and assistance. When the common standards are in place, it needs a commitment of AEC member countries to adopt and to implement the standards.

Three, GVCs put more importance in trade of intermediate goods between firms/countries/regions that are included in the value chain. This makes connectivity is a necessary condition to ensure goods flowing timely within the chains. The AEC implementation should improve transportation system, logistics and ICT infrastructure within and between its member countries to realize a borderless region. It needs to establish a production base and gain benefits through a creation of backward linkage to each domestic economy. The borderless region can also be extended beyond ASEAN by including other Asian countries (e.g. China, Korea, Japan, India).

In the context of upgrading dynamics; first, the implementation of AEC should make its member countries capture higher value added in their participation in the AEC and integration of AEC into global economy. Higher value added is attained through upgrading dynamics: process, product and function accompanied by the formation of higher capability rather exploitation of labor or environment. Experience of Indonesia's electronics industry has shown that forming relationships with global actors will help local firms to undertake upgrading and to increase capability to some extent. Nevertheless the greater upgrading outcome is highly dependent on own efforts of local firms in developing their capability.

The AEC should benefit its member countries in improving the quality of human capital and acquiring innovative capability in order to upgrade and capture higher value added from their activities. For this regard, quality education and training system should be developed and shared among the AEC member countries to improve their labor skill and business capability. In addition, AEC implementation should improve institutional framework within its members to ensure a free flow of skilled labor and innovation in order to utilize division of labor and knowledge spillover.

Second, capability upgrading may require the AEC and its member countries to shift rather than move along GVCs governed by global actors. AEC should step out of its role as production base and supplier for GVC leaders and organizing its own value chain. The emergence of countries and region including China, India, Brazil, South Africa, Eastern Europe and Middle East, in which the market penetration of GVC leaders is less pronounced, should be considered as opportunities for the AEC and its member countries to undertake functional upgrading. The AEC should insert into original design and brand manufacturing niches in these emerging countries. For this purpose, the AEC should support the development of market intelligence center to provide information for its

member countries to gain understanding of demand characteristics and consumer needs in the emerging market.

## 7. Concluding Remarks

The trade performance of the ASEAN demonstrates that its member countries increasingly exchange intermediate goods with each other. Consequently, ASEAN has potential to be a regional production base as stated in the AEC's objectives.

Nevertheless, the metrics of global value chains indicators demonstrate that some the AEC's member countries have limited integration into global economy. It means the countries rely more on raw materials supplied to and processed further by other countries within the global value chains. Moreover, the countries are least likely to be included in the fragmentation of global production.

Having a failure to success of AFTA makes implementation of the AEC challenging. The challenge is not just a matter of the fully implementation by its member countries, but more on the integration into global economy particularly to capture higher value added from its members' activities. Therefore the implementation of the AEC should be driven toward (1) ensuring social, economic and environmental sustainability through the establishment and implementation of common standards within its member countries, (2) increasing trade in intermediate goods and through an excellent connectivity and division of labor within a borderless region, (3) enhancing capability upgrading and quality human capital through a quality education and training system shared and adopted by its member countries, and (4) capturing higher value added through a movement along GVCs and a shift toward own ASEAN value chain.

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# Appendix

Polytron is a brand name of electronic products produced by Indonesian manufacturing firm (PT. Hartono Istana Teknologi). Since its establishment in 1975 Polytron actually has not any link with global brands in form of joint ventures or technical cooperation contracts. Polytron produces most electronics ranging from televisions, MP3 and MP4 players, mini compos, home theatres, washing machines, refrigerators and mobile phones. The products are sold mostly in domestic market (around 85%). Because most of value added activities are undertaken in-house, Polytron highly relies on its efforts to form and develop capability over time. For this purpose, Polytron has established a R&D department since the early development aims to upgrade its capability through 3I (i.e. Invention, Innovation and Improvement). Polytron utilizes various sources to acquire its knowledge; for instance from IC (integrated circuits) suppliers. Polytron will put into use IC application manuals provided by the suppliers and try to sort its deficiencies. Capability formation and development is a process required learning and investment efforts is reflected on how Polytron spends almost 10 years (1977-1985) to gain mastery in producing televisions. The process operative capability is learned from a training provided by electronic kits suppliers, while the innovative process and product capability is developed through a process of trial and error problem solving.

Capability formation and knowledge acquisition process of Polytron

| Period | 1977 | 1980 | 1984 | 1985 | 1986-Now |
|---|---|---|---|---|---|
| **Product** | Black& White TV | Large colour TV (i.e. 20, 26 inch) | Small colour TV (i.e. 14 inch) | Small colour TV (i.e. 14 inch) | a wide range of products |
| **Knowledge sources** | Electronics kit supplier, Belgium | Electronics set maker, Finland | Electronics manufacturer, Taiwan | internal R&D, Input and technology suppliers | internal R&D, Input and technology suppliers |
| **Learning process** | Staff training, input use | Staff training, equipment use | Staff training, input use | Self-learning | Self-learning |
| **Capability** | Assembly | Assembly | Assembly | Manufacturing, design | Design, marketing, manufacturing, linkage |

Source: Reconstructed from interview results by author

With the spirit of "Can Do" Polytron is able to use its well-established innovative process and product capability to produce not only mature consumer electronics, including televisions and refrigerators, but also high-tech and high value products, such as mobile phones and computer tablets.