

# **Political Economy of Regionalism in ASEAN and Its +3 Partners: Contemporary Changes in the Automotive and Electronics Production Networks<sup>1)</sup>**

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## **Abstract**

*The article discusses the looming ASEAN (Association of Southeast Asia Nations) regional architecture as it faces a puzzling question on how the region is moving towards a deepening economic integration beyond its ASEAN Economic Community (AEC) scheme. It addresses the issue in the context of the association's wider economic integration that is in parallel with its major member economies participation in regional production networks (RPNs). Automotive and electronics are selected as sectors*

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*in which firms originated from the +3 neighboring East Asian countries (China, Japan and Korea) –along with their suppliers, local partners and subsidiaries operated in the hosting ASEAN countries— are the major drivers.*

*Dynamic trade setting and value chain structures resulted from deepening participation in the automotive and electronics RPNs by ASEAN major economies (namely Indonesia, Malaysia, Singapore and Thailand) have paved the way for further ASEAN+3 regionalization. ASEAN+3 trade in the two sectors suggests a case in point that signifies the functioning of both intra (within ASEAN) and inter-regional (between ASEAN and its +3 partners) economic integration. Benefitting from such a trade setting, firms and other relevant stakeholders in the two sectors undertake strategies to capture value added featuring hierarchical and market value chain structures for automotive and electronics respectively. A typical “smiley curve” is less represented as value creation spans across different level of downstream, midstream and upstream business activities, and as firms –alongside their suppliers, local partners and subsidiaries— strategically respond to the ASEAN major hosting governments’ investment and industrial policy scheme.*

**Keywords:**

regional production networks, regional value chains, intra and inter-regional trade, regional economic integration, ASEAN regionalism

**JEL Classification:**

F13 (Trade Policy, International Trade Organizations), F15 (Economic Integration), L5 (Regulation and Industrial Policy), L6 (Industry Studies: Manufacturing), O19 (International Linkages to Development, Roles of International Organizations)

## A. BACKGROUND

Beyond its 27<sup>th</sup> summit in Kuala Lumpur (November 18<sup>th</sup> - 22<sup>nd</sup> 2015) that marked the official launch of ASEAN (Association of Southeast Asia Nations) Community (due by December 31<sup>st</sup> 2015), ASEAN regional architecture should be in a question mark, particularly as to how its ASEAN Economic Community (AEC) pillar will be progressed further. Relevance of CEPT-AFTA (Common Effective Preferential Tariffs of ASEAN Free Trade Area agreement) scheme is worth scrutinized as most manufactured goods have been exchanged among ASEAN member countries at near-zero tariff rates. As of February 2015, average tariff rate of overall ASEAN-10 members is 0.23% (for a number of 98,821 tariff lines) where the ASEAN-6 has a mere 0.03% average tariff rate (for a number of 60,925 tariff lines) and the ASEAN-CLMV has a record of 0.55 average tariff rate (for a number of 37,896 tariff lines)<sup>3)</sup>.

Despite its successful trade-creation effects on promoting intra-ASEAN trade<sup>4)</sup>, the question lingers on how firms and other relevant stakeholders in the member economies would actually benefit from deepened economic integration under the current scheme. A study by Okabe and Urata (2013) maintains that tariff elimination under AFTA-CEPT scheme has resulted in an increased intra-ASEAN trade activity in a wide range of products<sup>5)</sup>. However, as suggested by Chapponniere and Lautier (2016),

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- 3) The original agreement (i.e. the Agreement on Common Effective Preferential Tariff (CEPT) Scheme for the ASEAN Free Trade Area/AFTA) was signed by relevant ministers of the six ASEAN member nations (ASEAN-6), i.e. Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore and Thailand during the 4<sup>th</sup> ASEAN Summit (on January 28<sup>th</sup> 1992 in Singapore) covering all manufactured goods (i.e. to include capital goods, processed agricultural products and those products failing outside the definition of agricultural products) to have 0-5% tariff rate reductions (within ASEAN members, based on each national schedules). The ASEAN-6 tariff reduction schedules were initially targeted for the commencement of AFTA by the year of 2008, but then were revised during the ASEAN Ministerial Meetings in September 1994 and July 1998 that the target was advanced to 2002. Major and significant revision on AFTA-CEPT schedules was finally undertaken under the ATIGA (ASEAN Trade in Goods Agreement) signed in February 2009 that mandated 0% tariff rate for all products in the Inclusion List (IL) for ASEAN-6 by 2010 and ASEAN-CLMV (Cambodia, Laos, Myanmar and Vietnam) by 2015 (ASEAN Secretariat 2016).
  - 4) See for example ASEAN Integration Report 2015, ASEAN Integration Monitoring Report 2013, and Okabe and Urata (2013) for more detailed assessment on the accomplishment.
  - 5) The study exposes the changing patterns of intra-ASEAN trade flows where intra-ASEAN import share increased (16% in 1990 to over 24% in 2004, then stayed around that level) and by contrast intra-ASEAN export share declined (22% in 1994 to around 18% in 1998,

the scheme offers limited spread between the AFTA-CEPT preferential tariff and the WTO-MFN (World Trade Organization-Most Favored Nation) tariff which explain general attitude of firms (as exporters) who consider that AFTA tariff gain is not worthwhile as it is smaller than its cost of transactions<sup>6)</sup>.

The article nevertheless suggests that those dynamic patterns of intra-ASEAN trade would correspond to changes in production networks between ASEAN and its key trading partners<sup>7)</sup>. In terms of achieving a regional production base<sup>8)</sup>, the changing intra-ASEAN trade patterns

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then increased gradually to reach 20–22% in the late 2000s, but did not exceed the corresponding import share). There is a rising trend of intra-ASEAN export share for processed goods in the 2000s. Declining trends of intra-ASEAN export shares are clearly distinguished for parts and components and capital goods, while primary goods and consumption goods remain more or less constant through the 1985–2010 period. Moreover, Okabe and Urata (2013) found that the changing patterns of intra-ASEAN import shares differ considerably from those for exports. Intra-ASEAN imports of parts and components and capital goods contributed to the rise of the intra-ASEAN import share from the early 1990s to the mid-2000s. The share for parts and components increased from 15.5% to 27.7% over the period from 1990 to 2002 and the share for capital goods rose from 7.7% to 21.4% during the 1990–2000 period. However, these shares began to decline slowly in the mid-2000s. One observes a rather noticeable increase in the intra-ASEAN import share for processed materials from the mid-1990s until the mid-2000s. The import share for the consumption goods increased slowly over the 1985–2010 period. Contrastingly, the share for primary goods declined notably from the mid-1980s until 2000 before rising very slowly. As a result of these changes, the gaps between the intra-ASEAN import shares for these categories of products (consumption goods, processed materials, parts and components, primary goods, and capital goods) narrowed over the 1985–2010 period. The gap between the highest and lowest shares was more than 20 percentage points in 1985 but declined to less than 15 percentage points in 2010.

- 6) As quoted by Chaponniere and Lautiere (2016), surveys carried out in the 1990s revealed that only 1.5 percent of intra-ASEAN exporters benefited from AFTA tariff exemptions (Nesadurai, 2003), and an Asian Development Bank (ADB) study revealed that only 22 percent of firms used the CEPT mechanism in 2006 (Cinieviski, 2010).
- 7) A couple of indications are suggested by Okabe and Urata (2013): (1) increasing trend in the intra-ASEAN import shares in parts and components and capital goods indicate the formation of regional production networks in ASEAN, under which procurement of these intermediate products is sourced within ASEAN; and (2) recognizing that China has become an increasingly important destination of ASEAN exports in parts and components and capital goods, a declining trend in intra-ASEAN exports in these intermediate goods indicate the presence of a production network involving ASEAN and China.
- 8) Establishing a single market and production base is one of the AEC major characteristics and elements which consists of free flow of goods, services, investment, capital and skilled labor (AEC Blueprint 2008-2105) with 12 priority sectors to be kept in mind, i.e. agro-based goods, air transport, automotive products, e-ASEAN (including ICT equipment), electronics goods, fisheries, health care products, rubber-based goods, textiles and clothing, tourism, wood-based products (ASEAN Bali Concord II Declaration 2003) and logistics

(particularly in products related to manufacturing) offer a new insight in comprehending and developing the ASEAN hosting governments' foreign direct investments (FDIs) promotion and industrial policy schemes, regional production networks (RPNs) and regional value chains (RVCs) that have been expanded alongside its neighboring East Asian partners, i.e. the +3 countries (China, Japan and Korea)<sup>9)</sup>. ASEAN economies deepening integration into RPNs/RVCs is predominantly apparent in the two leading manufacturing sectors, i.e. automotive and electronics, despite insignificant use of CEPT-AFTA mechanism by firms in the two sectors<sup>10)</sup>.

The article therefore aims to understand ASEAN economic integration, particularly in the context of ASEAN+3<sup>11)</sup> regionalization, by looking at its major member countries (i.e. Indonesia, Malaysia, Singapore, Thai-

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(added at the 2006 ASEAN Ministerial Meeting).

- 9) Prevailing comprehension on East and Southeast Asian production networks relies on combination of market and institutional-led factors where both multinational companies (MNCs) decisions (to locate and coordinate their fragmented production processes and value chains activities) and hosting government policy directives (in designing trade and investment policies to encourage in-bound FDIs for the purpose of import-substitution, export promotion and the elimination of domestic gaps in the value chain of production) play the key roles in developing the networks. The 1985 Plaza Accord which triggered appreciation of yen was considered as the major corner stone marking the beginning of international production networks in East Asia following decisions made by leading Japanese multinational companies (MNCs) to relocate their production bases to Southeast Asian countries (particularly Malaysia, Singapore and Thailand) seeking for lower production and labor costs (see e.g. Cheewatrakoolpong, Sabhasri, and Buditwattanawong (2013) for elaborate discussion on the emergence and advancement of East and Southeast Asia production networks).
- 10) Apart from its facilitating role for the regional export of agricultural products and processed materials, tariff elimination under CEPT-AFTA scheme promotes imports in electrical machinery and automobile equipment for which regional production networks have been set up (Okabe and Urata 2013). However, as previously indicated, CEPT-AFTA mechanism was utilized by only 22 percent of firms in 2006 (ADB study as quoted by Ciniewski, 2010 in Chaponniere and Lautier, 2015). Yet the share for Thailand rose up by 26.7 percent in 2008 (Chirathivat, quoted in ADB 2012) with large variations by sector as follows: 28 percent in the automobile industry (due to locational factor as Toyota's regional hub) and very low for electronics due to removal of customs tariffs on information technology (IT) products (Chaponniere and Lautier, 2015).
- 11) ASEAN+3 denotes the 10 ASEAN member countries and their 3 neighboring East Asian countries, i.e. China, Japan and Korea.

land and Vietnam) participation in the automotive<sup>12)</sup> and electronics<sup>13)</sup> RPNs. It comprehends regionalization not only as stages towards further trade liberalization, but also as a phenomenon that is significantly affected by changes in its lingering trade setting, i.e. the production networks and value chains. Such changes would in turn suggest distinctive value chains structures, FDI promotion and industrial policy schemes offered by the hosting governments. By such a postulation, it is understood that post-AEC integration is (and should be fostered) in parallel with the ASEAN economies deepening participation in the RPNs, and that ASEAN+3 regionalization depends accordingly on how firms and the host governments advance value addition activities as they benefit from (and eventually deal with) changes in the production networks.

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- 12) The article defines automotive sector as an economic area covering an industry that comprises a wide range of companies or firms along with their supply chains as well as other organizations involved in the design, development, manufacturing, marketing and selling of motor vehicles. In terms of commodities traded within the sector and/or industry, it is mainly categorized under HS (Harmonized System) Commodity Code number 87 (Vehicles other than railway, tramway) and/or SITC (Standard International Trade Classification) categorized under Transport Equipment.
- 13) Defining electronics sector and/or industry is a daunting task given its complexity and a wide range of products to be covered and categorized under the term of “electronics.” In its scientific term, electronics itself refer to electrical circuits that involve active electrical components, such as vacuum tubes, transistors, diodes and integrated circuits, and associated passive electrical components and interconnection technologies. Commonly, electronic devices contain circuitry consisting primarily or exclusively of active semiconductors supplemented with passive elements; such a circuit, and is described as an electronic circuit. Hence, at macro-level analysis, the article delineate electronics as mainly referring to products traded under HS Commodity Code number 85 (Electrical, electronic equipment) and/or SITC categorized under Electrical and Optical Equipment. However, at micro-level analysis, the definition of electronics may varied considerably due to indistinct categorization of contemporary products and manufacturing processes in the industry related to electronics, thus studying specific firm such as Panasonic would require a very careful analysis on its products development and segmentation. Sturgeon and Kawakami (2010) offer a useful categorization of the electronics industry based on its main products output, i.e. (1) Computers; (2) Computer Peripherals and Other Office Equipment; (3) Consumer Electronics; (4) Server and Storage Devices; (5) Networking; (6) Automobile Electronics; (7) Medical Electronics; (8) Industrial Electronics; and (9) Military and Aerospace Electronics. Referring to the categorization, the article’s micro-level analysis –that is based on firms-level assessment on companies such as Panasonic— primarily falls under category number (3) Consumer Electronics. The term “consumer electronics” is therefore preferably used in the article, i.e. to cover the micro firm-level analysis as in the case on Panasonic. Likewise the term “electrical (home) appliances” also resembles similarity of consumer electronics category.

## **B. QUESTIONS TO ADDRESS**

Considering such background and intention, the following guiding questions are put across as follows:

1. How do contemporary changes in the regional automotive and electronics production networks signify ASEAN+3 regionalization? What characterize the changes, i.e. in terms of trade pattern and trends in value added?
2. How do the changes characterize regional value chains structures in the two sectors? What responses are engaged by firms and other relevant stakeholders to deal with such changes?
3. In light of such changes, how do the hosting ASEAN governments further develop FDI promotion and industrial policy schemes? What are key lessons learnt?

## **C. ARGUMENT TO PROPOSE**

To address the questions, the article offers a conceptual framework that is based on an alternative approach to the existing theorization on regional economic integration and is thus focused on evolving concepts of global value chain and global production network (GVC/GPN) and their embedded notion of value addition. ASEAN+3 regionalization is hence understood as a phenomenon linked to byproduct setting of GVC/GPN –i.e. regional production networks and regional value chains (RPNs/RVCs)— in which automotive and electronics serve major driving roles. The following sets of argument are proposed in line with the framework and elaborated correspondingly to the above-mentioned guiding questions:

1. The automotive and electronics RPNs –driven mostly by lead firms and 1<sup>st</sup> tier suppliers whose home countries are of those the +3 partner countries— offer the following empirical (macro-level) setting for ASEAN+3 regionalization:
  - a. Trade between major ASEAN economies (Indonesia, Malaysia, Singapore, Thailand and Vietnam, hereafter called as ASEAN5) and their +3 East Asian trading partners (China, Japan and Korea) in

automotive and electronics-related commodities (i.e. under Harmonized System (HS) Code 87-vehicles other than railway, tramway, HS Code 85-electrical, electronic equipment, Standard International Trade Classification (SITC) C34T35-transport equipment and SITC-C30T33-electrical-optical equipment) represent both dynamic trade pattern and trends in value added.

- b. By total value of trade, Japan and China lead the ASEAN5+3 automotive and electronics trade respectively in the last five years. Thailand, Indonesia and Malaysia are the major trading partners of Japan in automotive (mainly in parts and components), while China's major trading partners in electronics are Singapore, Malaysia and Thailand (principally in electronics integrated circuits (ICs) and micro assemblies) and also recently Vietnam (in electrical apparatus for line telephony and telegraph). In terms of major export destination and import origin, ASEAN5+3 trade in the two sectors indicate up-to-date positions of the +3 countries, particularly in the cases of Japan and China where the former keeps its dominance in the inter-regional automotive trade and the later have put its ascendancy in the inter-regional electronics one.
  - c. In terms of value added created, the automotive sector reveals China-Japan trade capturing most of the foreign content of exported products, i.e. by more than five times that of Japan-Thailand and China-Korea trades. The added value created from domestic content of exported products for the automotive, however, is mostly captured within the +3 countries trade, with Indonesia-Thailand trade is closely trailing behind. Meanwhile in terms of value added captured, the electronics sector exposes superior China-Japan trade as it generates most of the foreign content of exported products by more than six times that of Korea-China & Japan-Korea trades. The added value generated from domestic content of exported products for the electronics is dominated by Korea-China trade, however interregional trades (particularly between China and Malaysia & Singapore) is catching up more and more domestic content of exported products.
2. At institutional (micro-level) setting, such changes implicate to firms strategy in capturing value added, how firms manage their relations



with suppliers, local partners/subsidiaries in maintaining and developing value addition activities, and how they respond to the hosting ASEAN governments FDI promotion and industrial policies.

- a. Responses by firms and other related stakeholders to the changes is characterized by value chain structures that denote: (1) a hierarchical network in the case of automotive sector where capturing added values are mostly depended on and relied upon the lead firm's value addition activities, and (2) a market network in the case of electronics (consumer electronics) as generating added values are much more diffused and shared among the lead firm, its suppliers and local partners/subsidiaries.
  - b. Based on micro-level analysis and two purposively selected case studies on Toyota (as a lead firm exemplifying automotive sector) and Panasonic (as a lead firm representing typical consumer electronics industry) that are both operated in ASEAN+3 RPNs, "back to basic" value addition activities are preferred, i.e. firms (along with their supply chain and distribution networks) tend to endeavor efficiency not only in upstream and downstream activities (by capturing value added in the areas of research, development and design (RD&D), and marketing and services), but also in mid-stream activities (by also capturing value added in the areas of production and logistics).
3. Those strategic responses by firms and the resulted value chains structures define regional value chains of the two sectors and how other related stakeholders, especially the hosting ASEAN governments, manage the chains both within ASEAN (intra-regional) and ASEAN+3 (inter-regional).
- a. Intra-regionally, hosting governments of key ASEAN economies (Indonesia, Malaysia-Singapore and Thailand) deliver variations in strategies to adjust the economies to both types of value chains structures, i.e. by orienting the chains more domestically (in the case of Indonesia), spatially conjoining the chains (in the case of Malaysia/Singapore) and immersing the chains of the two sectors (in the case of Thailand).

- b. Inter-regionally, in light of the ensuing regional value chains, three key policy issues are worth noticed as they cover topics on: (1) linking FDI and industrial policy schemes to the value chains; (2) establishing common policy platform for human resource development (HRD) and research, design and development (RD&D); and finally (3) seeking regional industrial cooperation mechanism in which existing ASEAN integration institutional schemes are to be utilized.

The following diagram –outlining the overall argument— offers stylized comprehension on the resulted value chains structures (a hierarchical network type for automotive and a market network type for electronics) as they correlate and generate impacts to both levels of regional economic integration and eventually as they define the ensuing regional value chains (RVCs) of the two sectors.

#### **D. OUTLINE OF THE ARTICLE**

To elaborate the argument, the remaining parts of the article are structured as follows. The subsequent Part E (Conceptual Framework) presents theoretical surveys clarifying conceptual understanding on regional economic integration as seen from GPN and GVC perspectives. A brief backgrounder of ASEAN+3 regionalization and description of Southeast Asia's position in contemporary GPNs are presented in next part (Part F). The presentation aims to offer an up-to-date assessment on ASEAN/Southeast Asia distinctive feature in contemporary regionalism.

The next following parts discuss the core argument of the article consisting three sections. The first section (Part G) presents macro-level trade setting that characterizes changes in the two sectors RPNs by displaying ASEAN5+3 trade pattern and trends in value added in commodities related to automotive (HS 87 and SITC C34T35) and electronics (HS 85 and SITC C30T33). The second section (Part H) presents micro-level setting that characterizes value chains structures of the two sectors RPNs as it also showcases value addition activities performed by firms (as exemplified in the cases of Toyota and Panasonic) and the hosting governments (as represented by key economies in the region: Indonesia, Malaysia, Singapore and Thailand). The third section (Part I) proposes key policy issues

**Diagram 1: Outlining the Argument**

Types of Value Chains Structure	Features and Impacts		Key Policy Issues toward Regional Value Chains
	Intra-regional (within ASEAN)	Inter-regional (ASEAN+3)	
Hierarchical Network: Automotive	Major Trade Nexus: Thailand-Indonesia*	Major Trade Nexus: Japan - Thailand, Indonesia and Malaysia	(1) FDI Promotion and Industrial Policy Linkage  Different magnitudes in the host country's structural problems, variations in policy design and degree of implementation  Aspiration for FDI promotion and industrial development schemes that are oriented towards value added-ness  (2) HRD and RD&D Policy Platform
	Main Commodities Traded: Passenger Cars (HS 8703), Parts and Accessories (HS 8708)*	Main Commodities Traded: Parts and Accessories (HS 8708)	
	Major Trend in Value Added: Thailand-Indonesia in domestic content of exported products (DVA)	Major Trend in Value Added: Japan-Thailand in foreign content of exported products (FVA)	
	Host Countries Value Chains Strategies: (1) Domestically Oriented Chains (Indonesia); (2) Chains Immersion (Thailand)	Firms Level Strategy: Case on Toyota  Value added are mostly captured by relying upon the lead firm's value addition activities	
Market Network: Electronics/ Consumer Electronics	Major Trade Nexus: Malaysia-Singapore-Thailand*	Major Trade Nexus: China – Singapore, Malaysia and Thailand	Prerequisite for value added as stakeholders are shared common challenges and need concerted actions in the issues of HRD (technical capacity and vocational training) and RD&D  (3) Regional Industrial Cooperation  ASEAN initiatives and facilitating roles: trade and industry "clearing house" and enhanced collaboration with the +3 countries agencies (e.g. by emulating the Japanese HIDA best practices in HRD training network)
	Main Commodities Traded: Electronics Integrated Circuits and Micro Assemblies (HS 8542), TV, Video Monitors and Projectors (HS 8528)*	Main Commodities Traded: Electronics Integrated Circuits and Micro Assemblies (HS 8542), and more recently electrical apparatus for line telephony and telegraph (HS 8617)	
	No Major Trends in Value Added are Indicated (neither in terms of FVA nor DVA)	Major Trend in Value Added: China-Malaysia/ Singapore DVA	
	Host Countries Value Chains Strategies: Spatially Conjoined Chains (Malaysia-Singapore)	Firms Level Strategy: Case on Panasonic  Value added are diffused and shared among the lead firm, suppliers, local partners and subsidiaries	

\*Note: data on these specific findings are not presented in the article as detailed presentation is previously elaborated in Arfani (2015).

worth considering in an endeavor towards the two sectors regional value chains. The last part summarizes, draws and offers policy lessons and recommendations.

## E. CONCEPTUAL FRAMEWORK

Late regionalization processes (including that of ASEAN and ASEAN+3) typically follow the prototype of that of European Union (EU)<sup>14)</sup>. Following the prototype however is the two contending international political economic approaches on economic regionalism<sup>15)</sup>: the neo-functionalism<sup>16)</sup> and the “inter-governmentalism.”<sup>17)</sup> The ASEAN+3 regionalization

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- 14) Emerged initially in the context of 1951 Treaty of Paris that was officially inaugurated the European Coal and Steel Community (ECSC), EU (through its leaders) drafted a constitution concluding its fully-fledged process of regionalization in October 2004. The 1957 Treaties of Rome embarked the installment of EEC (European Economic Community), Euratom and Common Market marking an era of much more fully-fledged regional integration among its members. In 1967, the three were merged to observe the establishment of the so-called EC (European Community) that in 1973 saw its first enlargement, then further enlargement since the 1980s onward. The 1992 Treaty of Maastricht eventually escorted the formation of European Union (EU) paving the way to even much more integrated social, economic, legal and political regional arrangement of the greater Europe. As of January 1<sup>st</sup> 1999, a common currency –Euro— was officially adopted in major parts of EU countries commencing the so-called Eurozone.
- 15) Early theorization and conceptualization of regional economic integration processes (that is empirically referred to European experience) could be traced back to the works of Ernst B. Haas (1958) *The Uniting of Europe: Political, Social and Economic Forces (1950-57)* (Stanford: Stanford Univ. Press) and Bela Balassa (1961) *Theory of Economic Integration* (Homewood, IL: RD Irwin). The works sparked the long-standing debate between the neo-functional theories (which are typically in line with Haas and Balassa) versus the inter-governmentalist theories (which offer counter-explanation to the phenomenon with Stanley Hoffman as the major figure). The neo-functional argues that “spill-over effects” of functional activities among countries involved in such processes would eventually generate integration of various economic and political activities. See section on “Conceptual Frameworks” for further discussion on this.
- 16) Referred mainly to the works of Haas (1958) and Balassa (1961), neo-functionalism is a novel synthesis of Mitrany’s theory of functionalism [David Mitrany (1943/1966) *A Working Peace System* (London and Chicago: RII/Quadrangle Books)] and Jean Monnet’s pragmatic strategy of European integration. Jean Monnet’s works (as the Secretary General of ECSC among others) contribute to the establishment and actual operation of the modest association of ECSC. Begun in the ECSC era onward, the neo-functional considers that integration of various economic and political activities among member states has signified the roles of non-state actors: interest associations, social movement, and secretariat of the organization.
- 17) Arguing against the “spill-over effects” explanation of neo-functionalism, inter-governmentalist theories –under their major figure of Stanley Hoffman— developed the approach in

offers an interesting case where it involves a large body of governmental involvement in the process but also seen as copycatting the functionalist European model. Empirical observation –such as in the automotive and electronics sectors— would reveal dynamic regional integration processes where industries, business practitioners and other key economic players are deliberately attached during various official talks. The consequence of such processes would bring about pressures (but also opportunities) among ASEAN countries and its +3 partners on how decisions should be made, on whose benefits and costs, and finally how political mechanism eventually negotiates the process<sup>18)</sup> .

An alternative approach to those existing theorizations is offered to capture how transformation of ASEAN took place in the context of ASEAN+3 integration efforts. In this particular case, the nature of regionalization is neither fully functional nor fully inter-governmental. Rather, it has been deeply influenced by market forces as well as inter-governmental decisions designed mainly in the milieu of trade and changes in its corresponding production networks as well as economic liberalization. It is therefore crucial to apprehend nature of those political economic relations –both at domestic and international levels— in acquiring the ASEAN+3 regional integration processes.

At this point, Global Value Chain (GVC) framework<sup>19)</sup> is applied to

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the mid of 1960s. Building on realist premises, it rejects the idea of neo-functionalism of loosely designed and developed integration. Rather, it proposes the idea that integration is a convergence of national interests. Thus the focus of regionalization is more on its major sets of inter-state bargains (especially inter-governmental conferences) and on the decision-making of the Councils of Ministers, rather than on the roles of the Commission, European Parliament, or societal actors.

- 18) Political economic explanations on this are diverse. Hurrell (1995) identify 3 (three) different clusters of this specific category of study: (1) the systemic theories, which emphasize the importance of the broader political and economic structures within which regionalist schemes are embedded, (2) the interdependent theories, which consist of neo-functionalism and neo-liberal institutionalism, and (3) the domestic-level theories, which highlight interest-group politics and societal pressures over foreign economic policy. The study considers that this three-level categorization is an essential foundation to comprehend the dynamics of ASEAN+3 regional integration processes.
- 19) GVC analysis has emerged since the early 1990s as a novel methodological tool for understanding the dynamics of economic globalization and international trade. It is based on the analysis of discrete 'value chains' where input supply, production, trade and consumption or disposal are explicitly and (at least to some extent) coherently linked. GVC discussion has revolved around two analytical issues: how GVC are governed (in the context of a larger institutional framework) and how upgrading or downgrading takes place along GVCs.

comprehend the ASEAN+3 regional economic integration by focusing on its production networks and commodity chains (IDE JETRO and WTO 2011, UNCTAD 2013). Special attention has then been given to the region's manufacturing industries following the achievement of its automotive and electronics sectors integration to the global networks (Humphrey and Memedovic 2003, JAMA 2013, Sturgeon and Kawakami 2010, Ueki 2013). The two sectors are considered as "success stories" given relatively significant roles of domestic suppliers and subsidiaries in value addition activities taken by Japanese lead firms (Kawakami 2008, Kuroiwa and Heng 2008).

The region's gradual integration to the global production network (GPN) that eventually began in the 1980s has paved the way to the development of its regional growth zones serving as a catalyst for the two sectors<sup>20</sup>. As previously described, the year of 1994 has marked the region's crucial move toward deeper integration by kick-offing the ASEAN Free Trade Area (AFTA) agreement which was then followed by series of inter-regional free trade agreements (FTAs) with the region's major trading partners including particularly of China, Japan and Korea as a *finale* for the two industries incorporation to the GPN. Contemporary GVC and GPN practices are originated from and hence a part of long-debated concept on "economic regionalism." The debate refers to the effects of trade agreements among countries on their larger economic context, i.e. whether such agreements would create or divert economic benefits towards its

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GVC institutional framework identifies how local, national and international conditions and policies shape the globalization in each stage of the value chain (Gereffi and Fernandez-Stark 2011).

- 20) While the concept of GVCs explores vertical and linear sequences of events along the chains, the concept of global production network—featured mostly by complex yet systemic relationships and interrelations between firms—deals with complex network structures in which there are intricate links (horizontal, diagonal as well as vertical) forming multi-dimensional, multi-layered structures of economic activities (Kuroiwa and Heng 2008). Typical organizational structures of a production network consist of global flagships (played by mostly multinational lead firms which are at the heart of a network) and local suppliers (which are characteristically featured based on their higher tier and lower tier positions in a network). Higher tier suppliers serve an intermediary role between lead firms and local suppliers. They usually have direct access to lead firms for negotiation and decisions over production-related activities. Lower tier suppliers are employed as 'price breakers' and 'capacity buffers' (which could be dropped at short notice) with no direct access to lead firms (Kuroiwa and Heng 2008).

member and non-member countries<sup>21)</sup>. Emphasize is thus put more on the “zero-sum” nature of regional economic integration where participating and non-participating countries alike are struggling to pursue “limited” economic benefits of trade agreements.

### 1. GVC and GPN Concepts

Introduction of GVC and GPN concepts –which immediately followed the concept of Global Commodity Chains (GCCs), discussed initially by Hopkins and Wallerstein (1986, 1994), and then elaborated thoroughly in the wake of massive economic globalization in 1990s by Gereffi (1994, 1995, 1996)— has redirected the debate on economic regionalism beyond traditional “state-centric” approach which relies on country-to-country trade performance. GVC and GPN practices –which are mostly operated under lasting (regional) trade agreements— have shifted the debate over whether developing a “positive-sum” scheme among participating parties in an integrated economic region should be the main concern. It thus broadens focus of the debate by encompassing non-state parties (particularly those of lead firms and their supply chains network) which are proposed in the later studies on GVC and GPN practices, such as indicated in Humphrey and Schmitz (2000), Gereffi and Fernandez-Stark (2001), Schmitz (2003), and Sturgeon (2008)<sup>22)</sup>.

Theoretical strands resulted from those early GVC and GPN conceptualization are focused on the analysis of value chain governance structures (Gereffi 1994, Gereffi et al 2005 and Sturgeon 2009), relational network configurations (Dicken et al 2001, Henderson et al 2002, and Yeung 2005), and industrial upgrading and the strategic coupling of clusters and

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21) Viner (1950) coined the terms of “trade creation” and “trade diversion” to describe those effects of the formation of free trade agreement. Referring to recent phenomenon of regional trade agreements (RTAs), Baldwin (2004) recapped the debate in its more contemporary trade context as of whether RTAs are stepping stones or stumbling blocks of the multilateral trading system.

22) GVC and GPN are conceptually developed mainly in the studies of economic geography, economic sociology, development studies, regional studies, international economics and international business. Gereffi (1994) and Humphrey (1995) are among the pioneer works of GVC conceptualization, which then followed by works of Bair and Gereffi (2001), Gibbon (2001), Humphrey and Schmitz (2002), Sturgeon (2002), and Gereffi, Humphrey and Sturgeon (2005). The so-called Manchester School of Economic Geographers, meanwhile, began conceptualizing GPN as early as of 2000s. They consist of, among others, Dicken et al (2001), Henderson et al (2002), Coe et al (2004, 2008), and Yeung (2009).

regions (Humphrey and Schmitz et al 2002, Smith et al 2002, Coe et al 2004, Yeung 2009 and MacKinnon 2012). Nevertheless, as suggested by Yeung and Coe (2015), conceptual framework in the GVC research has been characterized by its dyadic and static conception of industrial governance, its relative neglect of territorial organization, and its failure to theorize competitive dynamics and evolutionary processes of “multi-commodity” and “multi-industry” production networks. It is in response to such limitation of GVC research framework that the so-called GPN 1.0 framework was then proposed<sup>23)</sup> .

Much more dynamic changes in GPN practices, especially during the past decade, has made GPN 1.0 obsolete in terms of how firms and other actors or stakeholders in a production network survive and sustain despite uncertain market conditions (re: since particularly the global financial turmoil of 2007-8 and its prolonged global market slumps). GPN 2.0 framework was then suggested as a more ambitious round of theoretical innovation that seeks to break signify new conceptual ground and to inform subsequent rounds of empirical research (Yeung and Coe 2015)<sup>24)</sup> .

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23) Developed chiefly under the studies of economic geography and international political economy, GPN 1.0 emphasizes the complex firm networks and territorial institutions involved in all economic activity, and how these are structured both organizationally and geographically (Yeung and Coe 2015). Development of GPN 1.0 framework aims at providing a more generally applicable conceptualization of the GPN (Henderson et al 1999, 2002). Gaining influential role as a heuristic framework in economic geography research and the wider social sciences (Hess and Yeung 2006b, Coe, Hess and Dicken 2008, Coe 2009, 2012, and Neilson, Pritchard and Yeung 2014), GPN 1.0 proposed a theoretical claim that re-frames previous GVC-GPN debates, i.e. away from industry-level generalizations, towards a more dynamic theory of GPN by focusing on the structural competitive dynamics and actor-specific strategies shaping the network and their organizational configuration within and across different industries and localities. Under GPN 1.0 framework, GPN is defined as an organizational arrangement comprising interconnected economic and non-economic actors coordinated by a global lead firm and producing goods or services across multiple geographic locations for worldwide markets. It therefore specifies “actors” as different types of firms as well as non-firms ones (such as the state, international organizations, labor groups, consumers, civil society organizations) in diverse localities. Thus GPN 1.0 analytical focus is: (1) actors; (2) their organizational relationships (that constitute GPN in different industries, with a lead firm being a central, necessary prerequisite); and (3) those multiple locations that are bound together by economic relations between these actors (Yeung and Coe 2015).

24) In so doing, conceptualization on three competitive dynamics is offered, i.e. cost-capability ratio, sustaining market development, and working with financial discipline. Theoretically it needs to be seen how those competitive dynamics—considered as the independent variables (IV) where their existence varies geographically—interact with firms and non-firms actors in generating actor-specific or firms-level strategies (considered as the dependent



## 2. Value Addition

Empirical research ground brought about by this GPN 2.0 frameworks would need to go deeper into cases at firms-level strategies, industry-level structures, and other stakeholders (such as particularly the hosting governments) specific strategies for investment promotion and industrial development. In the cases of ASEAN+3 automotive and electronics GPNs, the article is to showcase Toyota and Panasonic as a prime illustration of lead firms –originated from one of the +3 countries— endeavoring strategies for value-added in the two respective sectors or industries. At industry-level, a typical value chain structure of ASEAN+3 automotive and electronics GPNs is featured to illustrate an early emergence of the two sectors regional value chains.

Typical value addition activities at firms-level are depended upon firms and their suppliers and subsidiaries efforts in adding values of their production or manufacturing processes, range of products, product variety, differentiation, mixture of activities and application of skills and/or knowledge in a variety of functions. In so doing, firms typically will go through all the way from their upstream business activities to the downstream sides by introducing series of efficiency, cost-cutting efforts and at the same time acquiring added values in their production sites/facilities, prod-

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variables (DV) with their geographically specific manifestation). GPN 2.0 framework foresees the following four different firms-level or actor-specific strategies in organizing GPN: (1) intra-firm coordination, (2) inter-firm control; (3) inter-firm partnerships, and (4) extra-firm bargaining (Yeung and Coe 2015). With such a framework, GPN 2.0 would extend beyond the industry approach commonly found in the existing framework of value chain governance to the micro-level analysis of actors or stakeholders seeking for industrial upgrading and local development, i.e. to include efforts to capture value added generated in the network. The micro-level analysis, which is also employed in this study, would catch specific responses of geographically situated firms and other stakeholders that are likely to adopt and pursue different strategies even within the same global industry, regional or national economy. The study –on which this article is based— therefore keens to further explore those firms-level/actor-specific strategies by purposely focusing on how they capture value added by taking the case of ASEAN4-Japan automotive and electronics production network. GPN 2.0 framework complements existing GVC analysis in inter-firm governance structures by identifying firms-level or actors-specific strategies in value addition activities at network formation stage and its industrial/territorial outcomes at the later capital accumulation stage. By so doing, it complements existing GVC analysis (such as on complexity and “codifiability” of inter-firm transactions and technology and knowledge capabilities within the supply chains) by offering causal explanation of the surrounding competitive dynamics and firms-level/actor-specific strategies.

uct development, organization of their supply chains, and technological development.

Originated from early GVC/GPN theoretical framework, conventional model of value addition activities at firms level emphasizes the differences of firms operated prior to the economic globalization (i.e. during the 1970s) and those operated after the era (i.e. in the 2000s). It maintains the idea that firms in the 2000s tend to be more efficient both in upstream and downstream activities making them to create more value added in the areas of R&D, design (upstream) and of marketing and services (downstream), while at the same time they tend to create less value added in midstream activities (especially in the areas of production and logistics). Firms in the 1970s therefore are considered as having less value added both in upstream and downstream activities, and tend to be dominated by production and logistics activities which make them not so efficient in creating added value. See Appendix 1 for an illustration of typical value addition at firm-level, a “smiley curve” depicting the differences between firms in the 1970s and the 2000s.

Value addition activities are also typically apparent in the form of transactions among firms, suppliers and other stakeholders in GVC/GPN. Transactions are conducted in line with the levels of its complexity (Cx-T) and codification (Cd-T), and of the competence of its major suppliers (SC)<sup>25)</sup>. Typical value chains structure resulted from such transactions are defined based on their explicit coordination and power asymmetry levels where the higher they are, the more hierarchical, and the lower they are, the less hierarchical. Coordination among related stakeholders is conducted more explicitly in hierarchical value chains structure type rather than the market one. Relations among them hence tend to be more asymmetrical when they are in hierarchical type than the one in market type.

The hierarchical structure type therefore is common within integrated firms where explicit coordination is of its core feature. The captive struc-

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25) Cx-T represents complexity of transactions conducted by related players in the value chain, Cd-T denotes the level of codification of the transactions made by related players, and SC signifies the level of major suppliers competence in order to complete the transactions. Five types of transactions are typically identified: (1) market where Cx-T is usually low level, but Cd-T and SC are high levels, (2) modular where Cx-T, Cd-T and SC are all high levels, (3) relational where Cx-T and SC are high levels and Cd-T is low level, (4) captive where Cx-T and Cd-T are both high levels, but SC is low level, and finally (5) hierarchical where Cx-T is high level, but both Cd-T and SC are low levels.

ture type takes place where lead firms have direct control over their captive suppliers. The relational structure type indicates the presence of relational suppliers who serve mainly as intermediaries between the lead firm and its component and material suppliers. The modular structure likewise suggests the emergence of turn-key suppliers who have managed, at certain stage, to convert their roles and position from mere component and material suppliers. The market structure type eventually represents symmetric relations between the suppliers and their lead firm(s) and/or subsidiaries, especially in terms of the use of market price as the sole mechanism.

Last but not least, strategic measures of host ASEAN governments in the area of investment promotion and industrial development are examined to stipulate legal and political economic environments confronted by the lead firms and their GPNs. In this article, cases on Indonesia, Malaysia and Thailand are offered in the context of initiating discussion on key policy issues confronted by relevant stakeholders in the network. The discussion comprises a concise and summarized assessment on historical and legal context of the policies, major key governmental agencies and other relevant stakeholders of the two sectors, and fundamental predicaments in delivering the measures and how policy adjustment are made.

## **F. ASEAN REGIONALISM**

The 1967 Bangkok Declaration marked the onset of ASEAN regionalism. It is then followed by series of treaties and declarations covering broad areas of shared issues, values and norms among ASEAN member states and their partners. Treaty of Amity of Cooperation (TAC) of 1976 Bali Declaration is the major landmark that provides the basis for ASEAN cooperation in political security, socio-cultural and economic affairs. Economic affairs cooperation was then being realized in 1992 Singapore Summit marking the initiation of trade liberalization under AFTA-CEPT agreement. In 2003, Tokyo Declaration witnessed enlargement of regionalization process, i.e. to include China, Japan and Korea under ASEAN+3 EAS (East Asian Summit).

### **1. Brief Backgrounder to ASEAN+3**

Looking at those historical conjunctures, ASEAN+3 regionalization re-

flects an intense and constant involvement of state/governments in its arrangement. The early historical outlook of ASEAN formation is highly politicized. It is appropriately explained in terms of the Cold War era marking the ASEAN national governments commitment to 'neutrality', the term that is only nicely applied to the fields of diplomacy, but not to military, economy and political ones. Militarily-speaking, all of the five ASEAN founding countries are heavily depended and relied on the US/Western powers since their successes in crushing Communist and other socialist forces domestically in the late 1960s onward. ASEAN economy was since then designed as parallel to the interests of the US/Western governments and businesses. Politically, there is no room to maneuver for ASEAN governments beyond the US/Western model of developmental political regime –be it authoritarian, soft authoritarian, semi-democratic, or democratic. Their East Asian counterparts –especially Japan and Korea, but also later China— shared similar historical backgrounds.

Accordingly, ASEAN arrangement and its ensuing development in the fields of economy, politics and military is deeply influenced by intentions to keep on tracks of neutrality, economic development needs, political and military amity among neighbors (under the hegemonic power of the US), and non-interference conception on any domestic affairs. The intention would then have been manifested in the notion and practice of Treaty of Amity and Cooperation (TAC). The TAC paved the foundation of the so-called "ASEAN Way" as a principle in solving disputes among member countries. This has ultimately been the major landmark in the enlargement of ASEAN. The membership of Brunei Darussalam in the mid 1980s constructed the ASEAN-6 that completed with the memberships of four additional Southeast Asian countries (Cambodia, Laos, Myanmar and Vietnam) in the 1990s to form the ASEAN-10. Inter-regional dialogues between ASEAN and its partners open the way to broader regional arrangement to include the +3 East Asian countries (China, Japan and Korea) that is ultimately peaked in the idea of EAC (East Asian Community).

## **2. Southeast Asia in Contemporary GPN**

Southeast Asian countries participation in GPN is directly linked to the +3 countries –in the neighboring East Asia— that are home for lead firms operating mostly under the region's production networks. Share of East and Southeast Asia in the world manufacture trade, as a result, has

increased significantly during the past 25 years. East Asia's manufacture trade export rises from 28.3% (in 1992-3) to 35.1% (in 2009-10) and its manufacture trade import rises from 21.7% (1992-3) to 25.7% (2009-10), while Southeast Asia's manufacture trade export has almost doubled, from 3.5% (1992-3) to 6.3% (2009-10), and its manufacture trade import has slightly down from 6.2% (1992-3) to 5.7% (2009-10) (Athukorala and Kohpaiboon 2013). Pioneered by Malaysia and Singapore, the region participation in GPN dates back to the 1970s, especially in the "network products" (parts and components, and final assembly traded within production networks) which now account for almost two thirds of the merchandise exports of Singapore, Malaysia and the Philippines, almost half those of Thailand, and smaller but still significant share for Indonesia (Athukorala 2015)<sup>26</sup> .

Based on commodities traded (SITC), Southeast Asia's network products export composition confirms heavy concentration of network exports from Southeast Asia in electronics and electrical goods (SITC 75, 76 and 77) in particular, and semiconductor devices compared to total world network exports. Automobiles and other transport equipment account for only 9% of Southeast Asian exports, compared to a global average of 30%. At the individual country level, the composition of network exports from Thailand is much more diversified compared to the other countries. The striking difference between Thailand and Malaysia relating to the relative importance of automobiles within GPN is particularly noteworthy<sup>27</sup> . For semiconductors, network exports are significantly higher for Singapore (44.6%), the Philippines (42.7%), and Malaysia (36.2%), compared to Thailand (11.4%), Indonesia (4.7%) and Vietnam (4%) as of 2011-12 (Athukora-

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26) Shares of Southeast Asia network products in world manufacturing trade have also been persistently growing during the past 25 years. Share of the region's parts and components export has doubled from 22.7% (1992-3) to 52.5% (2011-12), and its import has also increased from 36% (1992-3) to 47.3% (2011-12). However, in the final assembly, Southeast Asia export share has declined quite significantly from 34.1% (1992-3) to 19.5% (2011-12), and its import share has dropped slightly from 18.4% (1992-3) to 16.3% (2011-12). The growing importance of Southeast Asian countries as suppliers of parts and components to final assembly activities within China-dominated production network needs to be pointed out, especially when it is compared with corresponding data of China. Over 22% of parts and components imports (2011-12) to China originated from Southeast Asia, up from 12% (1992-3), and share of parts and components in total manufacturing exports to China from Southeast Asia increased from 38% (1992-3) to 62% (2009-10) (Athukorala 2015).

27) See Athukorala and Kohpaiboon (2010) for deeper analysis on the two countries contrasting policies over domestic automobile industry.

la 2015).

The growing significance of Southeast Asia as parts and components trade hub is certain in the case of electronics, but also is suggesting in the case of automotive sector. As part of global and regional production networks, dynamic trade pattern among ASEAN4 countries in electronics sectors have fostered them to involve in various types of parts and components trade along with its network products, such as electronic integrated circuits and micro-assemblies. In automotive sector, despite the fact that parts and components (i.e. motor vehicles/motorcycles parts and accessories) trade value is still lagging behind final assembly (i.e. passenger cars, trucks and motorcycles) ones, there has been a steady increase in parts and components trade among ASEAN4 countries (especially between Indonesia and Thailand, 2009-13).

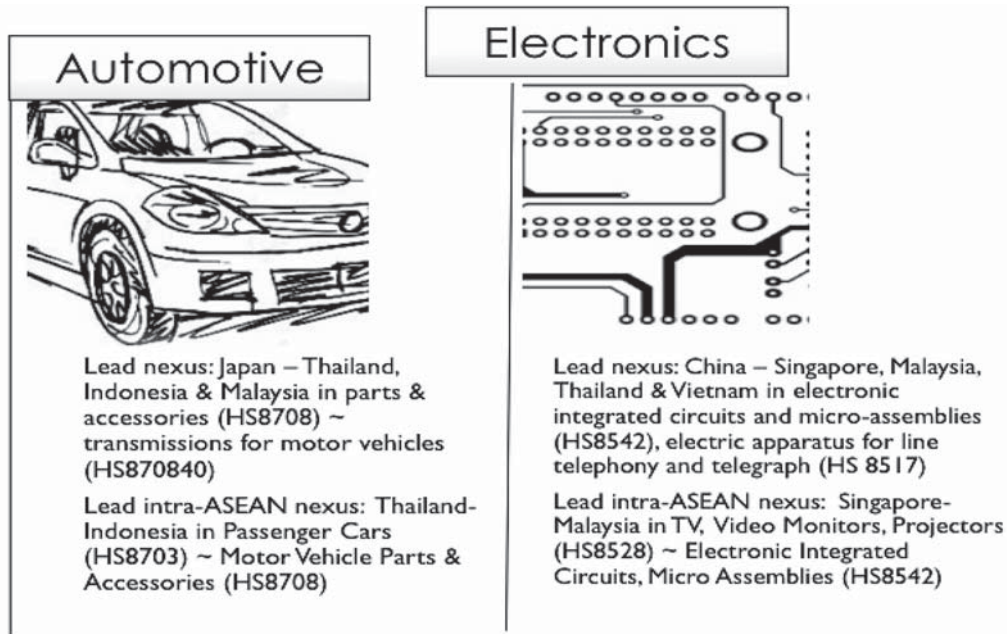
## **G. ASEAN+3 MACRO-LEVEL TRADE SETTING**

Seen from a macro-level (empirical) setting, ASEAN+3 regionalization is signified by distinctive trade pattern and trend in value added that is generated from the two sectors intra-regional (within ASEAN) and inter-regional (ASEAN+3) trading activities. ASEAN5 countries exemplify intra-ASEAN trade, whereas ASEAN+3 represents trade between ASEAN5 and the +3 countries. This section thus provide elaboration on the trade pattern and trends in value added of ASEAN5+3 trade in commodities related to automotive and electronics sectors. The analysis is based on statistical database and calculations provided by the UN Comtrade Database (2011, 2012, 2013, 2014 and 2015) and the WTO-OECD Trade in Value Added (TiVA) Statistical Database (2008, 2009, 2010 and 2011).

As previously mentioned, the following commodities under the Harmonized System (HS) (applied in the UN Comtrade Database) and Standard International Trade Classification (SITC) (applied in the WTO-OECD TiVA Statistical Database) are selected: HS Code 87-vehicles other than railway, tramway, HS Code 85-electrical, electronic equipment, SITC C34T35-transport equipment and SITC-C30T33-electrical-optical equipment. The following two sub-sections offers presentation on trade pattern (Sub-section 1) and trends in value added (Sub-section 2) respectively.

### 1. Trade Pattern

Diagram 2: ASEAN+3 Automotive and Electronics Trade Pattern



In automotive sector, ASEAN+3 trade nexus is led by Japan. Its main trade partners in ASEAN5 are Thailand, Indonesia and Malaysia, traded largely in parts and components. Total trade value (2015) for HS 87 between Japan (as reporter) and these three countries (as partners) is US \$ 8,121,376,798, down from total value of US \$ 13,079,062,700 (2013), but doubled that of China and the three countries total trade value for HS 87 (US \$ 4,080,945,878; 2015). As major partners, Thailand, Indonesia and Malaysia’s trade with Japan in the automotive sector is steadily intensifying. Despite such a decline (since 2013 onward), key players in the industry expect a turn this year as the last year’s trend shows a slight growth once again (Nakanishi 2015). Japan’s main export commodities are parts and accessories for motor vehicles (HS 8708) and its top destinations are Thailand and Indonesia. Its export of trucks (HS 8704) and passenger cars (HS 8703) is still substantial to Indonesia and Malaysia respectively. The country imports passenger cars and parts and accessories for motor vehicles quite substantially from Thailand.

Japan's trade with Thailand and Indonesia in parts and accessories for motor vehicles (HS 8708) is particularly in: (1) Transmissions for motor vehicles (HS 870840), i.e. export to Thailand at the value of US \$ 1,423,495,776 (2013) and Indonesia at the value of US \$ 577,167,074 (2013); and (2) Motor vehicles parts, nes./not elsewhere specified (HS 870899), i.e. export to Thailand at the value of US \$ 717,883,874 (2013) and Indonesia at the value of US \$ 455,638,641 (2013). Thailand and Indonesia are the major players in automotive industry among ASEAN5 countries. The two countries export and import activities in the sector's commodities are solidly increasing since 2009, with more and more passenger cars and parts and components being traded between the two countries, exceeding the volumes that previously existed between Thailand and Malaysia. Indonesia and Thailand trade is dominated by commodities under HS Code 8703, i.e. motor vehicles for the transport of persons (or passenger cars).

In electronics sector, ASEAN5+3 trade nexus is led by China trading mostly in electronic integrated circuits (ICs) and micro assemblies. ASEAN5 leading partners of China in HS 87 are Singapore, Malaysia and Thailand (respectively based on the total value of trade in the last five years). Despite an increasing trend in 2011-2014, the total trade value (in 2015) between China and these three countries for HS 85 decreases slightly to US \$ 74,097,150,426 (from its 2014 total value of US \$ 77,407,845,153).


























China's main export commodities are electronic integrated circuits and micro-assemblies (HS Code 8542) and its top destinations are Singapore and Malaysia. Its export of electric apparatus for line telephony and telegraph (HS 8517) has been considerably large, i.e. to Vietnam, Singapore and Thailand. Its diodes, transistors, semi-conductors, etc. (HS Code 8541) export is quite substantial to Malaysia and Thailand. The country imports electronic integrated circuits and micro-assemblies (HS Code 8542) in much more gigantic size (than its export) from Singapore and Malaysia, while it imports electric apparatus for line telephony and telegraph (HS 8517) quite substantially from Vietnam and Singapore, and also diodes, transistors, semi-conductors, etc. (HS Code 8541) quite substantially from Singapore, Malaysia and Thailand.

To recap, in terms of export destination and import origin, ASEAN+3 trade in automotive and electronics indicate changes in position of the +3



countries. Shifting positions are apparent particularly for Japan and China. Despite Japan dominant position in the automotive sector (that is chiefly performed with its traditional partners of Indonesia and Thailand), China's increasing role as major export destination is noticeable for Malaysia and Singapore, while Vietnam also imports more and more from China and Korea in commodities under HS 87. China's leading position in the electronics sector is evident as major import origin country for all ASEAN5. In the last 5 years, the country is the major export destination country in commodities under HS 85 for Singapore, and also lately (in the past 2 years) for Vietnam. The following Table 1 reveals the more complete description of the +3 countries position.

**Table 1: Position of the +3 Countries in ASEAN5+3 Trade in Automotive and Electronics-related Commodities (2011-2015)**

Sector ASEAN5	Automotive		Electronics	
	Major Export Destination Country	Major Import Origin Country	Major Export Destination Country	Major Import Origin Country
<b>Indonesia</b>				
<b>Malaysia</b>	 *			
<b>Singapore</b>	 and  **			 and  *
<b>Thailand</b>				
<b>Vietnam</b>		 and 	 and  *	 and 





















Notes: \*the trade value is increasing quite substantially over the years;

\*\*the trade value is increasing lately (particularly in the last two years)

Source: UN Comtrade Database (2011-2015)

In terms of major commodities traded (HS four digits code), the following Table 2 outlines the trends for China and Japan in electronics and automotive-related commodities traded in 2011-2015 as previously described.

**Table 2: Major Commodities Traded: China and Japan (HS 85 and 87, 2011-2015)**

	Top Export Commodities & Major Destination Countries	Top Import Commodities & Major Countries of Origin
<b>Electronics: China</b>	1. Electronic integrated circuits and micro-assemblies (HS 8542)  and  2. Electric apparatus for line telephony and telegraph (HS 8517)   and  3. Diodes, transistors, semi-conductors, etc. (HS 8541)  and 	1. Electronic integrated circuits and micro-assemblies (HS 8542)*  and  2. Electric apparatus for line telephony and telegraph (HS 8517)  and  3. Diodes, transistors, semi-conductors, etc. (HS 8541)   and 
<b>Automotive: Japan</b>	1. Parts and accessories for motor vehicles (HS 8708)**  and  2. Trucks (HS 8704) and passenger cars (HS 8703)  and 	1. Passenger cars (HS 8703)  2. Parts and accessories for motor vehicles (HS 8708) 

Notes: \*The trade value is almost quadrupled than that of the export;

\*\*The most traded commodities are transmissions for motor vehicles (HS 870840) and motor vehicles parts, nes./not elsewhere specified (HS 870899)

Source: UN Comtrade Database (2011-2015)

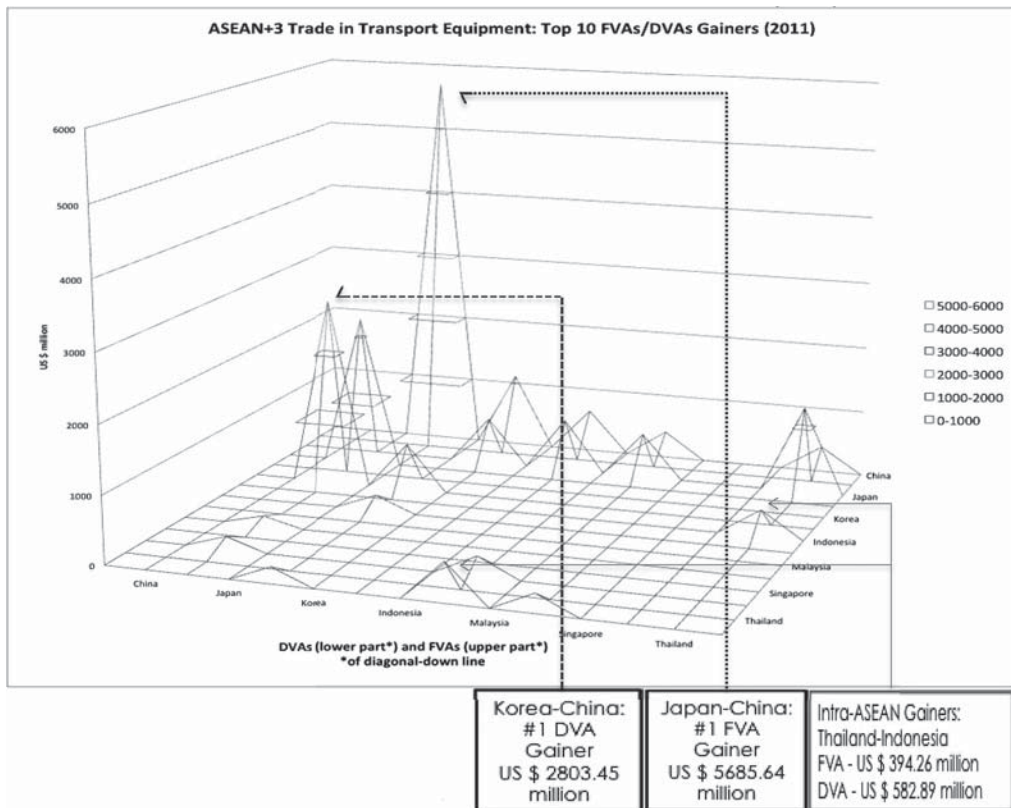
## 2. Trends in Value Added

This sub-section highlights pattern of trade in value added of the ASEAN+3 trade nexus in automotive-related and electronics-related commodities (for the year of 2008, 2009, 2010 and 2011) by featuring two selected variables, i.e. the foreign value added (FVA) embodied in domestic final demand and the domestic value added (DVA) embodied in foreign final demand. Domestic value-added content of export (DVA) is domestic content of exported products, while foreign value-added content of export (FVA) is foreign content of exported products. These two variables are selected to measure a country's GVC participation in world trade (UNCTAD, 2013). Each of the variables presents embodied value added in trade among ASEAN5 countries, China, Japan, and Korea for commodities related to the two sectors as described previously.

For automotive, as depicted in Chart 1 below, Japan-ASEAN5 trade produced considerably more FVAs and DVAs than the ones resulted in China-ASEAN5 or Korea-ASEAN5 trades. Japan-ASEAN5 trade in transport equipment generated much more FVAs than FVAs created between China or Korea and ASEAN5 countries. Japan-Thailand FVAs stood at US

\$ 837.81 million (2008) and US \$ 1296.39 million (2011). Japan-Indonesia FVAs stood at US \$ 951.62 million (2008) and US \$ 782.51 million (2011). However, the largest FVAs are resulted from Japan-China trade where it stood at US \$ 3107.19 million (in 2008) and peaked at US \$ 5685.64 million (in 2011). Japan-Korea and Korea-China trade FVAs are trailing far behind with the values that are comparable to Japan-Thailand and Japan-Indonesia FVAs respectively. The total added value of Japan-China FVAs is five times more than the FVAs value of Japan-Korea, China-Korea, Japan-Thailand or Japan-Indonesia.

**Chart 1: ASEAN+3 Trends in Value Added ~ Automotive (2011)**

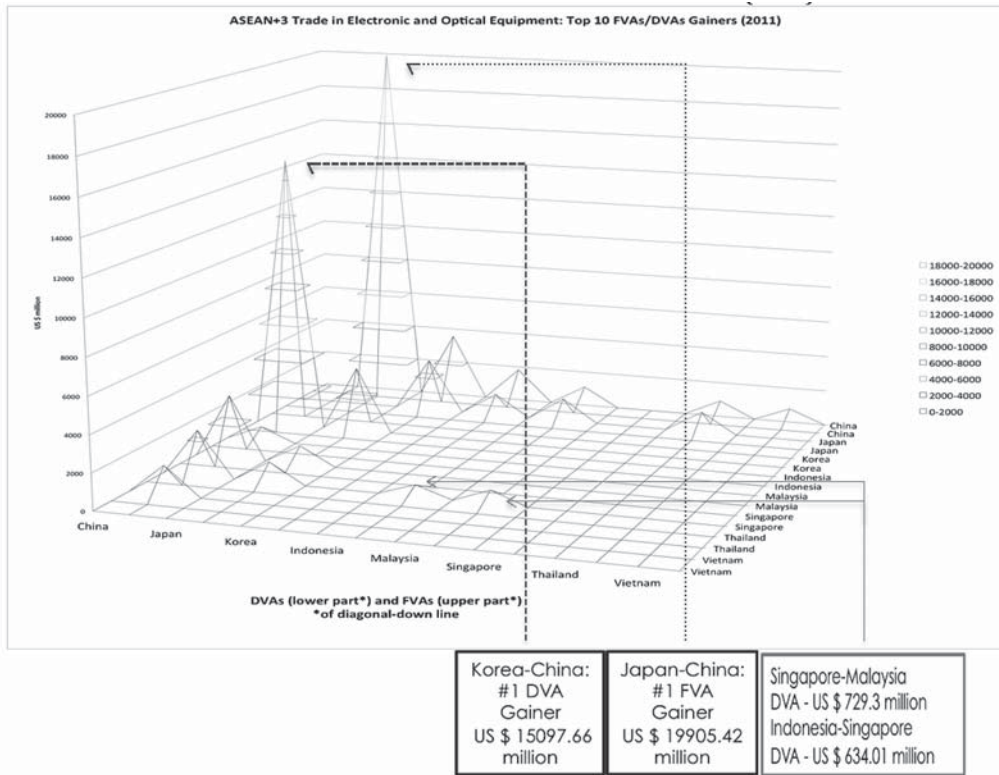


Source: OECD-WTO TiVA Statistical Database (2011)

In terms of DVAs, ASEAN+3 trade in transport equipment captures the highest value in Korea-China trade gaining US \$ 2803.45 million in 2011. It is then followed by China-Japan (US \$ 2276.11 million) and Korea-Japan (US \$ 696.83 million). It means that, the added value of domestic content of exported products in the ASEAN+ trade nexus is quite significantly captured among the +3 countries. It is slightly different from the trend in the FVAs, as previously described, where the added value of foreign content of exported products is captured inter-regionally, i.e. in the case of Japan-Thailand (although the value is one fifth of that of Japan-China). However, Japan-Thailand FVAs is slightly higher than that of China-Korea. The prevalence of Indonesia-Thailand DVAs that has an added value of US \$ 582.89 million in 2011 is worth noted since the value is close to that of Korea-Japan US \$ 696.83 million.

Chart 2 below depicts that, for electronics, inter-regionally China-ASEAN5 trade generated more FVAs and DVAs than the one created in Japan-ASEAN5 or Korea-ASEAN5 trades. The highest interregional added value created from foreign content of exported products is in China-Indonesia trade. It has an FVA of US \$ 1812.83 million (2011). The value is considerably higher than the one created in Japan-Malaysia (US \$ 1275.84 million), Japan-Indonesia (US \$ 1218.04 million) and Japan-Thailand (US \$ 1169.46 million). In terms of the domestic content of exported products, the highest interregional added value generated in the Malaysia-China trade that has a DVA of US \$ 3489.27 million. It is followed closely by Singapore-China that has a DVA of 2507.66 million. Those figures further reinforce major shifting in the electronics industry and its GPN that China is not only leading in terms of trade, but also in terms of value added. Like the automotive (such as in the case of Indonesia-Thailand DVA), there is obvious evidence in intra-ASEAN5 electronics trade that creates significant added value, i.e. the cases of Singapore-Malaysia and Indonesia-China that has a DVA value of US \$ 729.3 million and of US \$ 634.01 million respectively (2011).

**Chart 2: ASEAN+3 Trends in Value Added ~ Electronics (2011)**



Source: OECD-WTO TiVA Statistical Database (2011)

Table 3 below records the complete dataset for both sectors' top 10 FVA and DVA gainers. The dataset shows which country is gaining more value added as it trades with each respective partner in a particular sector. The findings are as follows:

1. Inter-regional (ASEAN5+3)

- a. Japan-ASEAN5 automotive trade nexus maintains its substantial capture of FVAs which means that Japan gains most foreign value added content of its export in commodities relating to SITC transport equipment to ASEAN5 (valued US \$ 2749.96, a sum total of Japan's FVAs with Thailand, Indonesia and Malaysia, highlighted by \* in Table 3, see automotive FVA column);

- b. China-ASEAN5 electronics trade nexus captures most FVAs which means that China captures most foreign value added content of its export in commodities relating to SITC electronic and optical equipment to ASEAN5 (valued US \$ 4592.04, a sum total of China's FVAs with Indonesia, Malaysia, Thailand and Vietnam highlighted by \*\* in Table 3, see electronics FVA column);
2. Intra-regional (ASEAN5)
    - a. Thailand-Indonesia automotive trade captures the greatest FVAs which means that Thailand gains most foreign value added content of its export in commodities relating to SITC transport equipment to Indonesia (worth US \$ 394.26, indicated by \*\*\* in Table 3, see automotive FVAs column);
    - b. Indonesia-Thailand and Indonesia-Singapore automotive trades capture most DVAs which means that Indonesia gains most domestic value added content of its export in commodities relating to SITC transport equipment to Thailand and Singapore (worth US \$ 872.92, a total of Indonesia's DVAs with Thailand Singapore, indicated by \*\*\*\* in Table 3, see automotive DVAs column);
    - c. Singapore-Malaysia electronics trade gains most DVAs which means that Singapore captures most domestic value added content of its export in commodities relating to SITC electronic and optical equipment to Malaysia (worth US \$ 729.3, indicated by \*\*\*\*\* in Table 3, see electronics DVAs column).

**Table 3: ASEAN+3 Trade in Value Added: Top 10 Gainers (2011, millions US \$)**

Automotive		Electronics	
FVAs	DVAs	FVAs	DVAs
1. Japan-China (5685.64)	1. Korea-China (2803.45)	1. China-Japan (19905.42)	1. Korea-China (15097.66)
2. Japan-Thailand* (1296.39)	2. China-Japan (2276.11)	2. China-Korea (3547.83)	2. Korea-Japan (3581.69)
3. China-Korea (1102.49)	3. Korea-Japan (696.83)	3. Japan-Korea (2914.38)	3. Malaysia-China (3489.27)
4. Japan-Indonesia* (782.51)	4. Indonesia- Thailand***** (582.89)	4. China-Indonesia** (1812.83)	4. Singapore-China (2507.66)
5. Japan-Korea (697.32)	5. Indonesia- Singapore***** (290.03)	5. Japan-Malaysia (1275.84)	5. Thailand-China (1583.32)
6. Japan-Malaysia* (671.06)	6. Malaysia-Thailand (281.02)	6. Japan-Indonesia (1218.04)	6. Singapore-Japan (1134.1)
7. China-Indonesia (638.32)	7. Thailand-Japan (244.13)	7. Japan-Thailand (1169.46)	7. Malaysia-Japan (1028.59)
8. China-Malaysia (404.8)	8. Indonesia-Japan (235.37)	8. China-Malaysia** (1095.09)	8. Indonesia-China (787.06)
9. Thailand- Indonesia*** (394.26)	9. Singapore-China (188.62)	9. China-Thailand** (906.42)	9. Singapore- Malaysia***** (729.3)
10. China-Thailand (385.64)	10. Malaysia-China (145.64)	10. China- Vietnam** (777.7)	10. Indonesia-Singapore (634.01)

Source: OECD-WTO TiVA Statistical Database (2011)

## H. ASEAN+3 MICRO-LEVEL SETTING

At micro-level (institutional) setting, endeavor towards ASEAN+3 economic integration is undertaken via strategic actions taken by firms and the hosting ASEAN governments in light of ensuing automotive and electronics RVCs. Lead firms (along with their suppliers and local partners/subsidiaries) –as exemplified in the cases of Toyota (Box 1) and Panasonic (Box 2)— capture value added and hence endeavor value addition activities for efficiency at production sites, product development, organization of their supply chains, technological development and technical capacity building<sup>28)</sup>. Whereas hosting governments –as represented by cases on Indonesia (Box 3), Malaysia/Singapore (Box 4) and Thailand (Box 5)— offer varied investment promotion and industrial policy schemes in response to dynamic changes in the surrounding automotive and electronics RPNs.

28) See Arfani 2015 for more elaborate elucidation on how firms undertake the strategy.

## 1. Firms Strategy

Assessment on value addition endeavors by firms is undertaken by offering the following argument. In the automotive sector, as in the case of Toyota (see Box 1 below), the lead firm (Toyota Motor Corporation) endeavors to capture added values both in upstream and downstream value chain activities, its suppliers concentrate more on upstream, its local partners/subsidiaries focus more on downstream. In the electronics sector, as in the case of Panasonic (see Box 2 below), the lead firm (Panasonic Corporation) focuses more on downstream value chain activities, most of its suppliers incline more on upstream, while some of them are involved in downstream, and its local partners/subsidiaries tend to concentrate on downstream. As a result, in terms of value chain structure, the two sectors offer contrasting features where the automotive suggests an upward trend towards hierarchical network type and the electronics suggests a downward trend towards market network type.

### Box 1 Hierarchical Network: Case on Toyota

In automotive sector, lead firms have a common tendency maintaining and moving upward to hierarchical network structure. This has been evidenced particularly in the areas of design, R&D and manufacturing (i.e. in assembly) (*interview 2015: Watanabe; interviews 2016: Kohpaiboon, Tanaka, Sapta, Pongoh*). The 1<sup>st</sup> tier suppliers have mostly served the captive roles in the chains. Companies such as Denso Corporation and Aisin Seiki are few instances of 1st tier captive suppliers that have been serving lead automotive firms such as Toyota Motor Company. The 2<sup>nd</sup> tier, 3<sup>rd</sup> tier suppliers and so on are mostly relational and modular ones, while almost none performs the market network type (*interview 2015: Watanabe*). Being subsidiaries/affiliates of the lead firms, local partners (which in most cases are local lead firms/conglomerates) tend to serve hierarchical roles in governing the value addition in some upstream-manufacturing activities for automotive sector. Most local partners in automotive sector are active in downstream (especially in logistics and marketing) activities, i.e. by benefitting from their hierarchical governance value chain type.



Apart from the Toyota Motor Corporation (TMC) robust global corporate profile and stable financial performance that is aspired to “making ever better cars”, intra-firm coordination and inter-firm partnerships have been conducted via joint ventures and subsidiarity with local partners, and solid business relations with suppliers, particularly at the 1<sup>st</sup> and 2<sup>nd</sup> tiers (interviews 2015: Watanabe, Mitzuta; interviews 2016: Okabe, Tanaka, Sapta, Pongoh, Prasetiyani). In terms of upstream value chains activities, Toyota case offers expansion of manufacturing sites, introduction and application of self-reliance mechanism for ensuring product quality (i.e. by world-widely applied, standardized instruments and procedure, and further implementation of low cost automation machineries). Toyota downstream value chains activities incorporate mobilized and active local partners, especially in the area of personnel training or human resource development, after sales services and brand management. With such value chains activities, value added-ness in the case of Toyota is defined in terms of its both upstream and downstream activities (for the lead firm), more on upstream and less on downstream (for suppliers), and less on upstream and more on downstream (for local partners/subsidiaries).

#### **Box 2 Market Network: Case on Panasonic**

As previously stated (see footnote 13), the article refers “electronics” chiefly to “consumer electronics” products categorization. Product range under this category includes: (1) In-house Consumer Electronics (home audios & cinema, televisions & projectors, video players); (2) Portable Consumer Electronics (cameras, camcorders, media players, mobile phones); (3) In-car Entertainment and (4) Computers & Peripherals (desktops computers, portable computers/tablets/netbooks/laptops, monitors, printers, etc.). Lead firms in this category tend to move downward, i.e. serving more towards relational and modular governance types, or even towards market governance (*interviews 2016*: Kohpaiboon, Tanaka, Yamashiro).

Hierarchical structure type is less desirable and hence limited only to design and R&D activities by lead firms (*interviews 2016*: Ne-

gara, Kohpaiboon). In production, manufacturing, logistics and marketing activities, lead firms are more and more relying on suppliers' roles where the 1<sup>st</sup> tier serves as the captive, and many more 2<sup>nd</sup> and 3<sup>rd</sup> tiers involve in relational, modular and market governance types (*interviews 2016*: Kohpaiboon, Negara). However, local partners in electronics sector are less engaged in hierarchical governance type, particularly in upstream (production/manufacturing) activities. Rather, they venture more towards modular and even market governance types that cover not only downstream business activities, but also their upstream ones, i.e. to comprise areas such as design and R&D.

Consumer electronics market structure thus suggests a downward trend (of industrial collaborations) where transactions among lead firms, their suppliers and local partners are generally signified by decreasing complexity, but at the same time by better codification of transactions and increasing suppliers competence. The case of Panasonic serves a parallel pattern. For its upstream value chains activities, the company maintains its existing production manufacturing facilities, by introducing and applying low cost automation machineries, and initiating and developing locally grown product design and development. At downstream activities, Panasonic maintains rigorous local partnerships, especially in sales and marketing.

Thus, for Panasonic Corporation, efforts to capture value added are defined in terms of more downstream activities as profit margin has become much narrower. For its suppliers, it is defined in upstream and midstream activities as they serve multiple procurers. And for local partners/subsidiaries, it is more on downstream activities as market has become much more diversified and segmented. Since the overall electronics regional value chains is structured towards market-type transactions, suppliers (including the 1<sup>st</sup> tier ones) do not so much relied on the lead firm (Panasonic Corporation) strategies in value addition. They are instead adept to be part of the wider value chains encompassing diverse and competing lead firms. As a result, the company's problematic relations may arise, not only with their suppliers, but also with their local partners and/or subsidiaries (*interviews 2016*: Kohpaiboon, Tanaka, Yamashiro).

## 2. Policies of ASEAN Governments

ASEAN hosting governments attempt to devise their respective policies of FDI promotion and industry in response to the dynamic changes in surrounding GPNs, such as previously illustrated. In parallel to previous assessment, specific reference to automotive and electronics sectors is also presented with country cases of Indonesia, Malaysia (along with Singapore) and Thailand. Case on Indonesia (see Box 3 below) features typical FDI promotion and industrial policy with domestically driven value chains. Case on Malaysia/Singapore (see Box 4 below) indicates further integrated FDI and industrial policy schemes –benefitting from geographical proximity— to capture value added-ness. Case on Thailand (see Box 5 below) offers concerted efforts by relevant governmental agencies and stakeholders in the two sectors to value chains immersion in FDI promotion and industrial policy.

### Box 3 Domestically Driven Value Chains: Case on Indonesia

Indonesia FDI policy schemes reflect dispersed vision in terms of lacking integrated industrial development policies within sectors under GPN. Its large domestic market further complicates its policy measures. It eventually leads to domestically oriented value added as also described in the previous section on Trends in Value Added (implying that the country is oriented more on domestic than foreign content orientation of its value added). The country's automotive\* and electronics\*\* FDI promotion and industrial development policy is designed and implemented under Ministry of Industry (MOI) and Ministry of Trade (MOT) along with the Investment Coordinating Board (ICB) whose mandate is to coordinate works and functions of related government agencies responsible for investment services. MOI and MOT have also particular directorates that are designed to support value addition activities and upgrading for national or local players in the automotive industry –and in the case of SMEs, in coordination and collaboration with Ministry of Cooperatives and SMEs.

Value addition policy of both sectors is within the authority of the MOI's Directorate General of Metal, Machinery, Transportation Tools

and Electronics Industries, in terms particularly of products and parts and components standards, production processes and licensing. The MOI's Directorate General of Small & Medium Industries is in charge of supporting and upgrading 2<sup>nd</sup> or 3<sup>rd</sup> and lower tier SME suppliers in addition to the ones provided by Ministry of Cooperatives and SME. In electronics sector, Ministry of Communication and Information (MOCI) regulates soft products of the industry, i.e. content of audio-video production and broadcasting agencies. In the context of supporting the industry to value addition activities, MOI, MOT and ICB are agencies dealing with hard side of the industry, i.e. in product, process & functional upgrading of the industry. The soft side of the industry is anticipated mostly under the guidance of MOCI along with the newly established agency of Board of Creative Economy (BEKRAF). The latter is an agency in charge of developing blueprint for supporting creative economy, including the one related to the electronics industry.

Additional notes (Box 3 Domestically Driven Value Chains: Case on Indonesia):

\*For automotive sector, Indonesia hosts approximately 700 automotive suppliers that are ranging from the 1<sup>st</sup> tier to the lower tier ones (*interview* 2016: Saptia). The 1<sup>st</sup> tier ones consist chiefly subsidiaries of Japanese and other foreign principals and their directly-linked vital parts and component suppliers (which are also sometime categorized under the 2<sup>nd</sup> tier ones), such as Aisin, Denso, KYB, Aoyama, etc. The 3<sup>rd</sup> tier and lower ones are typically local by origin, i.e. home grown local companies/SMEs (*interviews* 2016: Soerjono, Tandiele). This type of suppliers is supported and supervised on a regular basis by MOI (Directorate General of SMEs Industry), Ministry of Cooperative and SMEs, and several supporting agencies, such as Indonesia Automotive Center and Indonesia Automotive Industry Association (GAIKINDO).

\*\*For electronics, Indonesia is home to some 235 companies in electronics and home appliance manufacturing business, i.e. to include component makers (MOT 2014). Among the listed companies are local subsidiaries of Japanese & other leading brands: Panasonic, Toshiba, Sharp, Sony, Samsung and LG. Others are suppliers of parts and components that are listed either as FDI, joint ventures (JVs) or fully locally owned companies/SMEs. The latter category mostly has businesses in medium and low-end products, i.e. audio-video and TV sets (including LCD & LED types), AC, refrigerators, washing machines, etc. (MOT, MOI 2016). Some FDI and JVs have begun to manufacture/assemble selected high-end products and inter-sectoral upgrading.

**Box 4 Value Chains Complementarity: Case on Malaysia/Singapore**

Malaysia (along with Singapore) pioneers efforts to connect their industries to GPN in Southeast Asia via particularly electronics sector\*. Technological advancement of electronics industry in the 1990s that was coupled with worldwide information communication technology revolution has affected the Malaysian electronics industry\*\*. The 2000s observed delivering bases of centers for value added activities in the areas of research, development and design (RD&D), brand development, virtual manufacturing, customer service which also include beginning of local companies/suppliers SME to go global for supports of tooling automation in other parts of the world, especially in China, the Philippines and Central America. Malaysia is currently witnessing the presence of leading electronics makers or brands operating their operational headquarters (OHQs) and international procurement centers (IPCs)\*\*\*.

In automotive sector, Malaysia is fond for its national car policy following New Economic Policy (NEP) that has been successfully combined with sound FDI policy for the sector –side by side with the success of its electronics and wider manufacturing sectors\*\*\*\*. Prior to NEP, automotive assembly activities had been also the feature for both passenger and commercial car manufacturing and production during 1950s and 1960s. The industrial development thus followed the typical ISI (import-substituting industrialization) model. Major players were companies affiliated to or subsidiaries of American or European leading carmakers –and mostly owned by entrepreneurs belong to either Chinese or Indian groups. NEP subsequently inquired the shift in corporate ownership structures. As a result, during 1970s, Malaysian automotive industry witnessed major changes where company manufacturers, assemblers, and dealerships then shifted. Major development of the country's industry then follows the commencement of its national car programs under the brands of PROTON and PERODUA where the industry's related stakeholders (Japanese lead-firms, their local subsidiaries and suppliers, government agencies and other supporting agencies) respond to changes in production network and specific policy environment.

Additional notes (Box 4 Value Chains Complementarity: Case on Malaysia/Singapore):

\*The first attempt to connect with foreign investments were initiated by the state of Penang in 1971 when its proposal on Free Trade Zones (FTZs) development was supported by the Federal Government and enacted as the Free Trade Zone Act 1971. The proposal is modeled after the success of implementation of FIZs (Free Industrial Zones) in Taiwan and Korea. FIZs are home for approximately 1800 electronics related companies that make up the Malaysian E&E (Electrical and Electronics) industry encompassing a wide range of products and activities including computer and peripherals, optics, telecommunications products as well as providing services such as design of integrated circuits and prototyping (Yeow and Ooi 2009). The FIZ transformation began in 1970s (beginning of nation-wide semiconductor manufacturers with simple assembly operations capability and labor-intensive feature (abundant low cost female workers), but with significant effect to the entire Malaysian manufacturing industry). The 1980s then witnessed expansion and moving up value chains of manufacturers with IC packaging capability and capital-intensive feature (via automation to generate advanced semiconductor packages: flip chip, organic land grid array (OLGA) packages, field programmable gate array (FPGA) and multi-leaded chips). The 1990s has further seen supporting high technology industrial development with IC wafer fabrication capability and technology-intensive feature (via setting up R&D and design centers, outbound overseas training of Malaysian engineers to world ICT centers in Japan, the US and Europe, SME suppliers full automation, deepened semiconductor packaging development, manufacturing process development and design activities).

\*\*Responding to the changes, some electronics and electrical (E&E) sub sectors moved up in the value chains, some others adapted by and integrated with the cluster/zones intersectoral upgrading, while the remaining others stayed in the conventional medium and low-end electrical and electronic products (*interview 2016*: Negara, Tanaka). The Kulim Hi-Tech Industrial Park (KHTP) in the northern state of Kedah –set up in 1996— was the first hi-tech industrial park. KHTP was home to 24 MNCs and 37 SMEs (2011) seeking for higher value added in the industry (Wulandari *not dated*).

\*\*\*It includes the prominent Japanese and Korean lead firms, the strengthening roles of various types of local subsidiaries and suppliers in the E&E production network, and the bold industrial policy framework designed by the Malaysian federal and states government in collaboration with other supporting agencies from the academic, research and policy circles.

\*\*\*\*The national car policy is designed under the country's New Economic Policy (NEP) following the racial tension that erupted into a bloody riot in 1969. Under NEP, affirmative action programs to the Malay ethnic group were introduced in almost every sector of political economic and social life (the so-called "Bumiputera Policy"). Strategic economic sectors/industries were then defined to include in the programs. Automotive sector is no exception under which such a policy corporate sector ownership is targeted to be composed of 30% for Malay, 40% for non-Malay groups (predominantly Chinese and Indian), and 30% for foreign by 1990 (*interview 2016*: Tanaka). The term Bumiputera itself denotes to Malay's ethnic group who is predominantly Moslem and also indigenous ethnic groups in both West (peninsular) and East (Sabah-Sarawak states) Malaysia (Rosli 2006).

\*\*\*\*\*The Malaysian foreign policy has so far attracted leading multinational companies, particularly those of Japan origin since the promulgation of Investment Incentives Act of 1968 and the establishment of the Federal Industrial Development Authority in 1967 (currently called as MIDA) (*interview 2016*: Tanaka).

### Box 5 Value Chains Immersion: Case on Thailand

Thailand has detailed plan and policy measures involving a variety of sectors and elaborating tax and other fiscal incentives to be offered to especially foreign investors. It is specified as “super clusters” encompassing prominently automotive and electronics sectors indicating high and advanced development stage of the covered areas\*. The country’s major GPN stakeholders in the two industries benefit from government active and progressive roles in the past 20 years (interviews 2016: Kohpaiboon, Abe, Okabe, Taguchi). In the electronics industry, relevant stakeholders variously define their roles and responses, e.g. by emphasizing on production for domestic market segments, thus creating locally grown brands\*\*. Captive 1<sup>st</sup> or 2<sup>nd</sup> tiers electronics suppliers are struggling with competition from independent suppliers (which are more flexible in supplying non-leading brands but with good market segmentation). This has made leading brands and their local subsidiaries (plus few local suppliers) to engage in limited activities in R&D and design, sometime in collaboration with their Malaysian or Singaporean-based company headquarters (interview 2016: Kohpaiboon).

Automotive and electronics industries in Thailand have strong supports from research and policy circles. Major supporting agency in automotive research, advisory, consultancy and policy advocacy is Thailand Automotive Institute (TAI)\*\*\*. EEI (Electrical and Electronics Institute) plays significant roles since 1998 in promoting and supporting the development and export of electrical and electronic products, as well as serving as a center of information for the electronics industry\*\*\*\*. In addition to EEI and other related governmental agencies, R&D and design activities in electronics industry is also carried out by lead firms, albeit its limited scope, such as the one initiated by Panasonic Corporation, i.e. the Panasonic Appliances R&D Center.

Additional notes (Box 5 Value Chains Immersion: Case on Thailand):

\*Administered mainly under the Board of Investment (BOI), the industrial zones classification is based on particular developmental stages in which some areas are classified under “special economic (development) zones” or SEZs and some other areas are classified as

targeted special industrial clusters as outlined in the government/BOI Cluster Policy or the cluster-based special economic development zones (SEDZ) policy. At the initial stage, the government targets to develop two types of clusters: (1) the super clusters and (2) other targeted clusters. Automotive and electronics sectors are both within the first category, i.e. the super clusters, along with several other sectors such as food and medical hubs, digital-based cluster, and eco-friendly pharmaceutical and chemical cluster. The official terms for the automotive and electronics sectors are automotive and parts cluster and electrical appliances, electronics and telecommunication equipment cluster (BOI 2015).

\*\*Such as in the case of air conditioner segment establishing local brand of "Saijo Denki."

\*\*\*TAI is established in 1998 based on the Cabinet Resolution (July 7, 1998) and the Ministry of Industry's Order No. 314/2541. The institute's roles are to recommend strategic plans and measures for the development of the automotive industry; support the operation of organizations in both private and government sectors to achieve the defined objectives; coordinate with related organizations for mutual operational support; and provide necessary services to manufacturers, such as product testing and inspection, training, and consultancy. Its scope of activities includes research, productivity improvement, product design, research and technology development, standard and product testing, human resources development and database.

\*\*\*\*EEI is autonomous agency under the Thai Ministry of Industry's IDF (Industrial Development Foundation). Its principal roles are promoting the industry's export via capacity building, promoting utilization of local raw materials, parts and components to increase value added of the products, promoting harmonization of Thai product standards with the international one, and supporting (local) product and brands development. One of its core activities is developing qualified and reliable in-depth database as a guideline for industrial promotion and development (EEI 2016).

## I. REGIONAL VALUE CHAINS

Having explored firms' strategy in value addition and reviewed schemes of investment policy as presented in the preceding section, the article is to identify several key issues worth noted in light of ensuing regional value chains of the two sectors. The issues shall be addressed both at domestic or national as well as international levels through particularly existing ASEAN integration institutional schemes. The following questions are therefore addressed: (1) how to link existing FDI and locally grown parts and component suppliers to the value chains? (2) how to establish common policy platform for advancement of RD&D, HRD, vocational training and other technical capacity building activities among firms and other related stakeholders in the two sectors? (3) how ASEAN proceed with integrated regional industrial cooperation scheme?



## 1. FDI and the Value Chains

A functioning regional value chain would need a well-developed FDI scheme to be planned and implemented in individual ASEAN country. However, when confronting with value addition challenges, certain FDI issues are elementary. In the case of Indonesia, for example, the question remains on how the country addresses on exiting brown fields versus green fields FDIs. It is thus on how the country sees the future look of its overall FDI schemes. In the case of Malaysia, the *bumiputera* policy legacies linger the country's FDI and industrial policy, especially on the automotive sector. It is a challenging question for the country on how the effect of its contemporary FDI promotion schemes would affect to its affirmative policy to local stakeholders. Nevertheless, the case of Thailand presents a policy measure that goes beyond conventional approach to FDI promotion and industrial policy. The policy has made it possible to immerse and mix value chains activities among local subsidiaries and 1<sup>st</sup> or 2<sup>nd</sup> tiers suppliers.

The latest Thai strategic measure is centered on the "super clusters" policy in which promotion of FDI production and industrial manufacturing is to be shared among different industries. It is generally set up for intermediating roles of specific suppliers (such as in the digital-based cluster, e.g. digital GPS mobile equipment and application software) so that they could be plugged in multiple industries, such as automotive and electronics. As a result of absence of such a measure, local consumer and home appliance electronic suppliers in Indonesia have to make no easy option of whether to endure their conventional positions as Original Equipment Manufacturers (OEMs) or alternatively to switch roles as Replacement Equipment After-Market Manufacturers (REMs). Super clusters scheme is also to anticipate abundant numbers in local automotive parts and component suppliers in Thailand. A reverse situation applies to the Indonesian case where lacking numbers of local automotive suppliers is a major challenge for its future auto industry.

## 2. Common Policy Platform

In order to sustain, regional value chain needs common policy platform that goes beyond national borders and cut across different regulations. Malaysian case offers an effective pattern. As a result of the new automotive policy, the government (in response to its counterparts of

Thailand and Indonesia) sets up a policy platform in common and parallel to existing GPN. The country's local automotive suppliers therefore have to be adapted to frequent shift in quality standardization. Long before such a move, in the electronics industry, Malaysia local electronics suppliers have maintained their key roles in GPN, especially as part of the growing RD&D centers and services activities. As the largest market in ASEAN automotive, Indonesian policy makers aspire to develop industrial clusters oriented towards RD&D. The existing capacity is limited, but there are some good practices of local level RD&D centers. Thailand auto industry is in its path for technical breakthrough by outsourcing prototype 3-D design to local parts and component manufacturers.

In electronics sector (with specific reference to consumer electronics, home electrical appliance products), setting up a common policy platform are quite challenging as ASEAN countries struggle to adjust existing vocational training and RD&D schemes. Thailand is looking for possibility of integration of existing college/university level internships program to the super clusters policy need. Indonesian electronics stakeholders discuss on where to put emphasis when technical capacity of its electronics industry is to be developed. The concern (which is also shared by their counterparts in Thailand) is whether to stay at current value chains in consumer/home electrical appliance manufacturing or to have inter-sectoral value chains shift, i.e. to initiate a wider RD&D orientation in its future electronics industry.

If the former option is preferred (i.e. staying at home appliance electrical value chains), one possibility is to further link existing manufacturing technical know-how to current practices of HRD and vocational training undertaken by many Japanese lead firms and supported by Japanese government scheme. In the case of Indonesia, linking existing curriculum of vocational colleges with the current Japanese manufacturing network in home appliance electrical products seems to be much feasible, by utilizing good practices from "Kenshusei" alumni and widening scope of the existing HIDA (Japanese Overseas HRD and Industry Cooperation Agency) training scheme among others. Typical ASEAN consumer electronics industry capacitates engineers and workers at local firms, suppliers and subsidiaries by charting conventional style of management practiced by the lead firm (as in the case of Panasonic in Thailand and Indonesia).

If the latter option is preferred (i.e. by shifting the electronics value

chains inter-sectorally), the policy platform shall be an open and inclusive one, i.e. to attain international/regional expansion of industrial expertise and technical capacity, and inter-industry collaboration and standard harmonization within the GPN. The Malaysian electronics industry puts forward an illustration where expansion of local companies/suppliers network in overseas training activities are participated by local engineers and managers acting as trainers for their overseas partners. Several Japanese lead firms production networks in ASEAN5 applies similar pattern where engineers are transferred among factories under AEC industry services-related harmonization schemes. Adopting lead firm's production system (such as TPS/Toyota Production System) is also preferable, i.e. in designing on-the-job, in-house, vocational college graduate employees training in the wake of growing attractiveness of manufacturing employment.

### 3. Regional Industrial Cooperation

In the context of institutionalizing current industrial collaboration practices, ASEAN devises several schemes in support of stakeholders' efforts to capture value added in the two industries GPNs. Stakeholders are to take benefit from the schemes. Developed by ASEAN Secretariat in the framework of ASEAN integration monitoring (*interviews* 2016: Tijaja, Bakhtiar), the schemes offer the following possible utilization:

- (1) Utilizing beyond MRA (Mutual Recognition Agreements), especially in engineering sector services where the two industries are mostly in need of regional technical and engineering capacity building exchanges;
- (2) Benefiting from ASEAN Business Advisory Council (ABAC) activities and initiatives, especially for ASEAN Trade and Investment Centers (ATIC) which is initiated in the framework of ACIA (ASEAN Comprehensive Investment Agreement);
- (3) Developing the contemporary trade facilitation (TF) model on standards harmonization and conformance as outlined in the ASEAN Guidelines on STRACAP (standards, technical regulations and conformity assessment procedures) - cosmetics sector as best practice;
- (4) Advancing ASEAN regional economic connectivity scheme, especially through existing regional value chains (RVCs) and regional

production networks (RPNs) – automotive and electronics as key examples;

- (5) Connecting to national focal points established in ASEAN member states in the framework of TF and non-tariff measures agreement – a case of ASEAN Single Window initiative.

MRA in engineering sector services provides a feasible launch pad for future cooperation among stakeholders in the two industries, especially in HRD and technical capacity building training and exchanges. ASEAN governments and other related agencies are to design their training programs in parallel to the firms and suppliers actual need. Through ABAC whose memberships consist of prominent business and industrial representatives, impact of future industrial cooperation could go beyond conventional inter-firm relations. Initiative on ATIC further provides a platform for detailing regionally designed inter-firm relations at regional level that are adaptive to the current changes in the GPN.

ASEAN cosmetics industry is among one of the ASEAN Priority Integration Sub-sector (PIS) that offers best practice of regional industrial collaboration. In implementing harmonization and integration measures, the cosmetics industry stakeholders take the benefit of regionally integrated framework of product standards and regulation. They are at best utilizing the ASEAN member states harmonized framework in TF and other non-tariff measures via ASEAN Single Window. Electrical equipment and electronics is also among the ASEAN PIS that needs significant boost in its harmonization and integration measures given its dominating regional activities in RD&D, production, marketing, distribution and assembly of the many precision components that make up the final products. Although automotive is not in ASEAN PIS, the same effort should be at the stakeholders' top concern.

## **J. CONCLUDING REMARKS**

The article offers an argument that, as a regional economic integration scheme, ASEAN+3 trade is in parallel with ASEAN member countries deepening participation in the regional and global production networks. It presents dynamic trade pattern in which Japan and China lead in the automotive and electronics trade respectively. Thailand, Indonesia and Ma-

Malaysia are the major trading partners of Japan in automotive sector. Singapore, Malaysia and Thailand (plus also most recently Vietnam) are major partners of China in electronics sector. China-Japan trade captures most of the foreign content value added of exported products. Intra-ASEAN trade (as in Indonesia-Thailand nexus) is closely trailing behind in creating value added from foreign content of exported products. Value added that is generated from domestic content of exported products is dominated by Korea-China electronics trade. Interregional trade (particularly between China and Malaysia-Singapore) is increasingly capturing domestic content of exported products.

The article also suggests that firms and other relevant stakeholders in the two sectors benefitted from such a trade setting by advancing value addition activities. Changes in contemporary GPN implicate further to the firms strategy in capturing value added, how firms manage their relations with suppliers and local partners/subsidiaries in maintaining and developing value addition activities, and finally how they respond to the host government policies in the area of investment promotion and industrial development. A hierarchical and market type value chain structures are discovered respectively for automotive and electronics. Finally, in terms of value addition activities, "back to basic" measures are taken by firms (along with their supply chain and distribution networks) as they strive for efficiency not only in upstream and downstream activities (by capturing value added in the areas of RD&D, marketing and services), but also in midstream activities (by also capturing value added in the areas of production and logistics).

Such strategic responses by firms, suppliers and local partners/subsidiaries and the resulted value chains structures eventually define regional value chains of the two sectors. Several key policy issues are identified accordingly, i.e. to set forth domestic and regional talks on how ASEAN governments, policy makers and other relevant stakeholders in the two sectors define a well-fitted FDI promotion and industrial development policy options that are in line with the existing regional value chain structures. The talks are also set for policy debates on how governments establish common policy platform for RD&D, HRD, vocational training and other technical capacity building. And, last but not least, initiative for an integrated regional industrial cooperation scheme should also be set on the table.

Aiming particularly at initiating such an integrated regional industrial cooperation scheme, a couple of specific policy recommendations are proposed. First, as lead firms and other related stakeholders taking constant efforts to value addition, ASEAN governments through their representatives in the ASEAN Secretariat shall initiate a trade and industry “clearing house” to be located in a key industrial hub connecting ASEAN trade nexuses, such as Singapore, where major lead firms’ operational head quarters (OHQs) are also located. The house deals with regional industrial cooperation that is to be implemented under and in good offices of the ASEAN Secretariat. Under the framework, the ASEAN trade and industrial representatives and policy makers are to be in constant coordination among themselves along side with occasional consultation with firms’ representatives and other key business leaders.

Second, at national level, ASEAN governments are to advance collaboration with the +3 countries’ trade and industry associations and other relevant agencies in areas such as trade facilitation, FDI promotion and industrial development. As in the case of Japan, by detailing collaboration in the areas of industrial technical training, HRD and RD&D with agencies such as JETRO (Japan External Trade Organization), JICA (Japan International Cooperation Agency) and HIDA (the Overseas Human Resources and Industry Development Association), ASEAN FDI promotion and industrial policies will eventually be focused to the most relevant areas where value added are at its highest optimum benefits for ASEAN countries.

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*Primary Data Sources: List of Interviewees*

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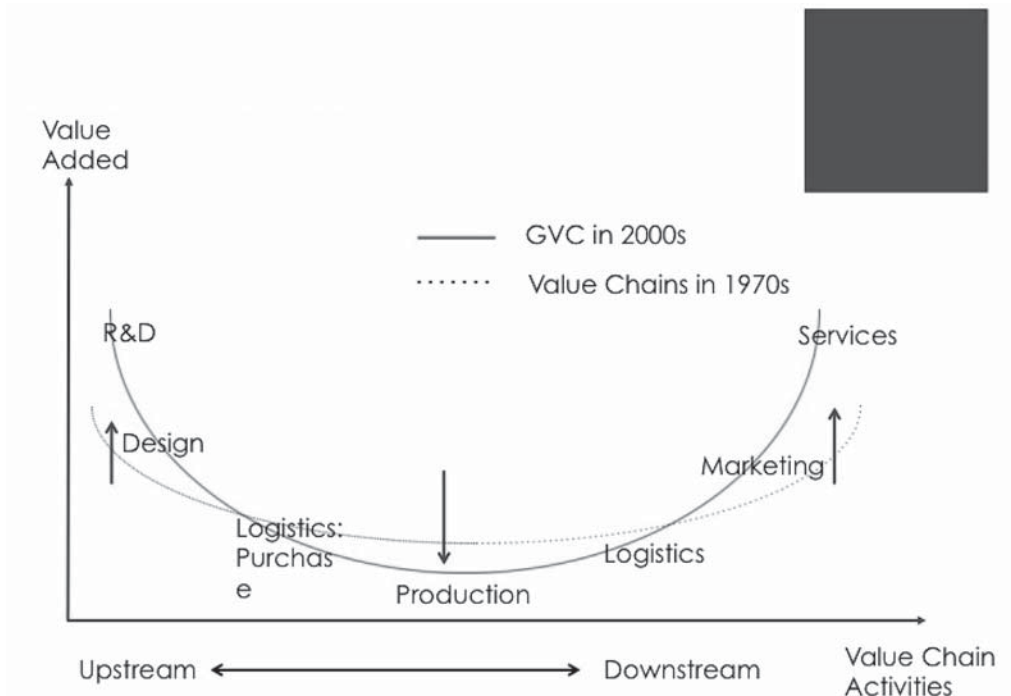
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## APPENDICES

### Appendix 1 : The smiley curve, typical value addition at firms-level



**Appendix 2: Diagrammatic Conceptual Framework**

