# HOW FAR CAN REGIONALISM WORK FOR PRODUCTION NETWORKS IN EAST ASIA?

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**Abstract**
International production networks in ASEAN and East Asia have presented unprecedented development since the 1990s. This paper discusses how a series of policy reform and regional economic integration have served for the formation of production networks and whether the logic of production networks calls for further institutionalization of economic integration in East Asia.

The paper first presents the extended fragmentation theory to analyze the mechanics of production networks and list a set of required policies for the formation and sophistication of production networks. It then reviews policy reform particularly in ASEAN that sets the stage of international production networks before the Asian currency crisis. It also discusses FTA proliferation after the Asian currency crisis where the restructuring of import-substituting industries and the further activation of production networks are accomplished. Overlapping FTA networking is evaluated in terms of the usage of preferential tariffs and possible complication due to complicated rules of origin.

The current system of overlapping FTAs in an open setting seems to gain a certain level of appreciation by production-networking private sector. However, it does not mean that consolidated, plurilateral framework with further institutionalization would be useless. Production networks obviously prefer stable economic environment backed up by more formal regional economic integration. Economists and political leaders are not very successful at this moment in presenting a convincing path of further economic integration.

## 1. Production networks and regionalism in East Asia

The East Asian economy since the early 1990s has been characterized by the formation of international production networks with active foreign direct investment (FDI). We have observed similar cross-border production sharing in other parts of the world, such as the US-Mexico, the US-Costa Rica, and Western Europe- Eastern Europe. However, production networks in East Asia, centered by machinery industries, are distinctive in (i) their significance in each economy in the region, (ii) their coverage that includes a number of countries in the region, and (iii) their sophistication in which both intra-firm and arm's length (i.e., inter-firm) transactions are finely combined (Ando and Kimura (2005)).

One of the key factors that made East Asia distinctive was the policy environment. Before the Asian currency crisis in 1997-1998, the formation of free trade agreements (FTAs) was still premature, but the accumulation of small trade/FDI-related policy reform, largely unilateral and with "race-to-the-bottom" nature, started shaping a policy regime favorable to the development of production networks. After the Asian currency crisis, more organized, collective effort to have better economic environment was paid in the proliferation of FTAs. Some FTAs, particularly ASEAN Free Trade Area (AFTA) extended to ASEAN Economic Community (AEM) and bilateral/plurilateral FTAs between ASEAN and Japan, were specifically designed to serve for production networks. Therefore, in order to discuss whether further institutionalization of regionalism would be advanced or not, it is important to check how and to what extent these deliberately designed FTAs have worked for production networks and to discuss whether or not the economic logic of production networks would call for further institutionalization of regionalism.

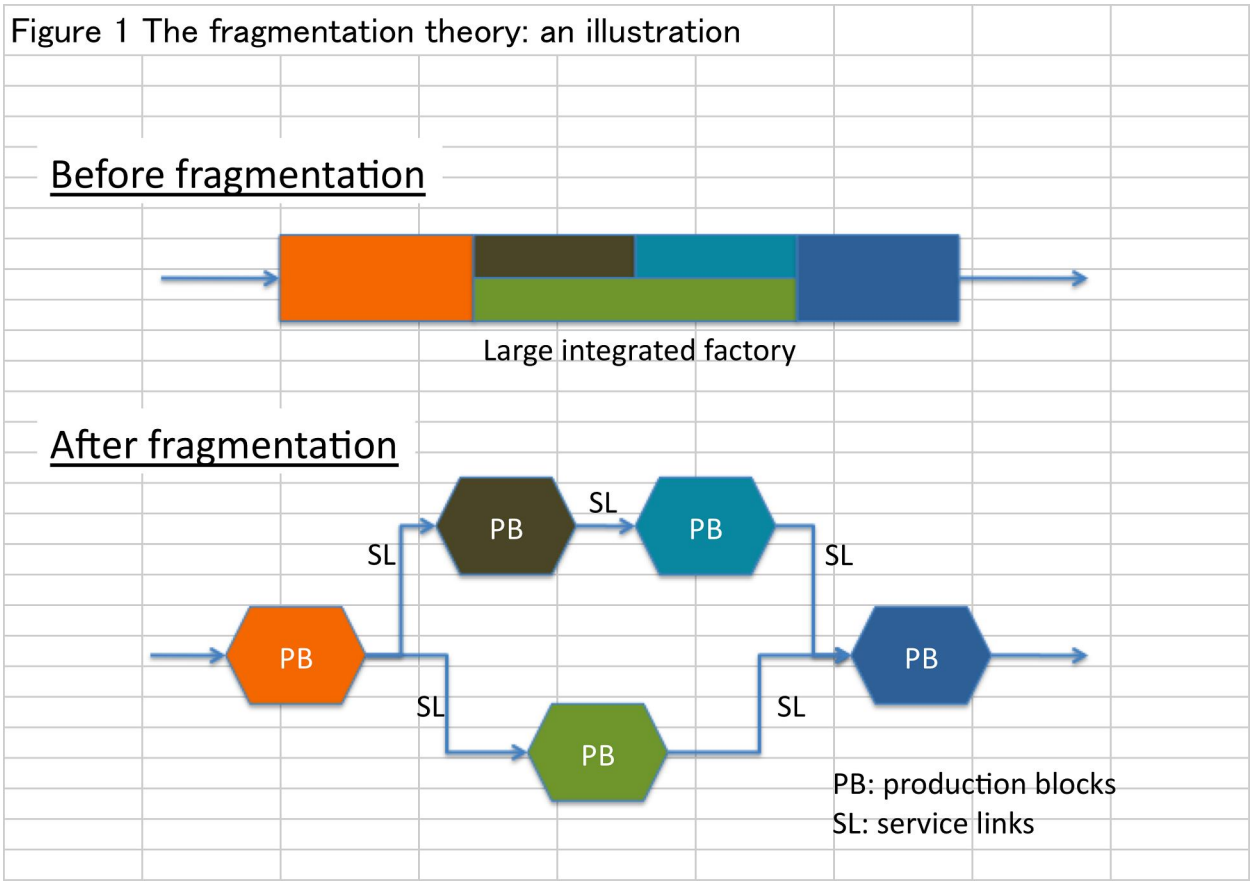
Although "institutionalization of economic integration" seems to be regarded as a key word for the whole ADB study, the project coordinators did not provide a clear definition of it for participants; rather, they asked paper writers to provide paper writers' own definitions. To my opinion, such a vague word cannot be a meaningful key concept unless establishing a common understanding from the beginning. In this paper, I thus would like to keep the word vague; including almost everything, from a looser concept such that it refers to transitions from *de facto* economic integration to *de jure* economic integration, to a tighter concept such that it expresses legal formalization of *de jure* economic integration with a wider and more consistent coverage of policy modes, stronger enforcement mechanism, and/or wider geographical coverage.

The paper plan is as follows: the next section sketches the mechanics of production networks and presents a list of policies that are called for in the process of the formation and sophistication of production networks. The third section reviews policy reform particularly in ASEAN that sets the stage of international production networks before the Asian currency crisis. The fourth section discusses FTA proliferation in the context of further activating production networks after the Asian currency crisis. The fifth section discusses how far the logic of production networks would call for further institutionalization of regionalism in East Asia.

## 2. Demand for policies facilitating production networks[1]

Although international production/distribution networks began to be formulated from the beginning of the 1990s, Jones and Kierzkowski (1990) made a head start in developing the theory of fragmentation. The theory pointed out fundamental differences between intermediate goods trade and finished products trade, particularly in the flexibility of firm's decision making in cutting out production blocks and the existence of service link costs. Figure 1 illustrates the original idea of fragmentation. Fragmentation of production processes makes sense when (i) the saving of production costs *per se* in production blocks is large and (ii) incurred service link costs for connecting remotely located production blocks are small. Firms can cut out production blocks so as to exploit differences in location advantages in remote areas. On the other hand, service link costs including not only trade barriers and transport costs but also various coordination costs should not be too large. In this sense, international division of labor in terms of production processes cannot be explained by simple extension of traditional trade theories of industry-wise comparative advantage, and transactions between production blocks tend to be relation-specific rather than those in spot markets.

Figure 1 The fragmentation theory: an illustration




The concept of two-dimensional fragmentation proposed by Kimura and Ando (2005) expands the idea of fragmentation in order to incorporate the sophistication of international

[1] This section provides a brief explanation on the mechanics of production networks. For more detailed discussion, see Kimura (2006).

production/distribution networks in East Asia. In addition to fragmentation in the dimension of geographical distance, the extended framework introduces fragmentation in the dimension of disintegration where a firm decides whether to keep some economic activities inside the firm or to outsource them to unrelated firms. This framework well explains the sophisticated nature of fragmentation in East Asia where both intra-firm and arm's-length (inter-firm) fragmentation of production processes is developed. By introducing the close relationship between geographical proximity and arm's-length transactions, the framework can also deal with the simultaneous development of the firm-level fragmentation of production processes and the industry-level formation of agglomeration.

Although cross-border production sharing exists between the US and Mexico, between the US and Costa Rica, and between Western Europe and Eastern Europe, these production-process-wise division of labor typically takes a relatively simple form with back-and-forth, closed-loop, and intra-firm transactions. For example, a US firm prepares a set of parts and components in the US, sends them to its own factory in Maquila in Mexico, and makes the factory send finished products back to the US market (see the left-hand-side picture in Figure 2). In the case of East Asia, we observe open-ended "networks" of production-process-wise division of labor that cover a number of countries with sophisticated combination of intra-firm and arm's length transactions (the right-hand-side picture in Figure 2). Transactions in long distance are likely to be intra-firm while those in short distance are predominantly arm's length. Particularly in some specific places, industrial agglomerations begin to be formulated in which vertical, arm's length, and just-in-time transactions among multinationals and local firms are activated.

## Figure 2: Cross-border production sharing and production and production networks – An Illustration

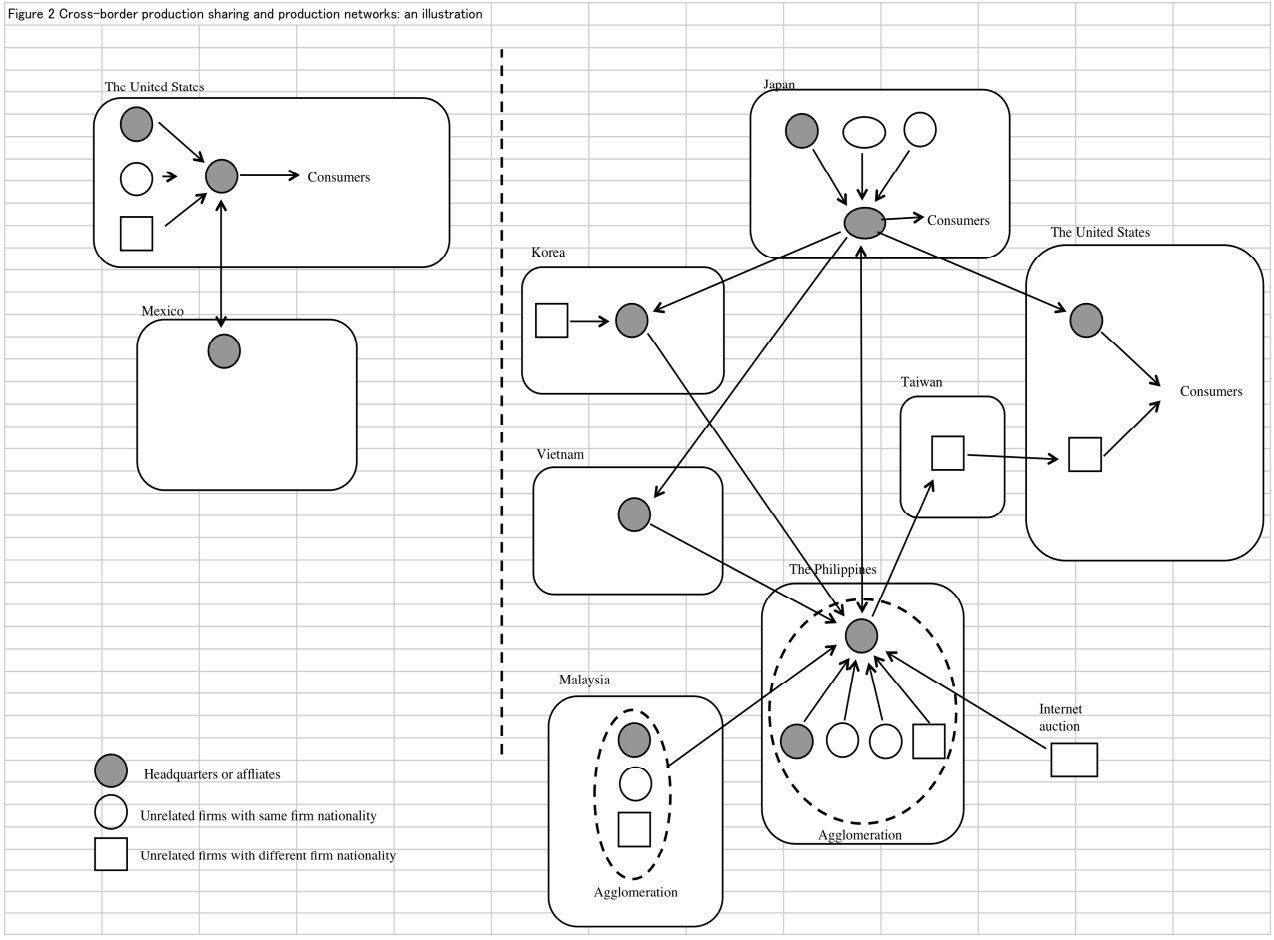


Table 1 presents the growth of machinery and parts and components exports by East Asian countries in 1990-2005. Intra-East Asian exports of all commodities grow by 4.3 times while those of parts and components expand by 7.4 times, indicating the development of production-process-wise division of labor. Inter-regional exports, i.e., exports to non-East Asian countries, also grow but at a slower pace. Therefore, the share of non-East Asian markets including the US market is steadily decreasing over time, even in the case of machinery finished products.

Table 1 The growth of machinery exports by the East Asian countries

**(a) Intra- and inter-regional exports (millions US$)**

| | 1990 | | 2005 | |
|---|---|---|---|---|
| | Value | % | Value | % |
| **Machinery goods: parts and components** | | | | |
| Intra-East Asia | 54,336 | 39.6 | 399,882 | 52.6 |
| Inter-regional | 82,915 | 60.4 | 360,823 | 47.4 |
| (U.S.) | (39,624) | (28.9) | (108,213) | (14.2) |
| Total | 137,251 | 100.0 | 760,705 | 100.0 |
| **Machinery goods: final goods** | | | | |
| Intra-East Asia | 50,932 | 23.2 | 254,738 | 35.6 |
| Inter-regional | 168,597 | 76.8 | 460,832 | 64.4 |
| (U.S.) | (70,183) | (32.0) | (188,911) | (26.4) |
| Total | 219,529 | 100.0 | 715,570 | 100.0 |
| **Machinery goods: total** | | | | |
| Intra-East Asia | 105,268 | 29.5 | 654,620 | 44.3 |
| Inter-regional | 251,512 | 70.5 | 821,654 | 55.7 |
| (U.S.) | (109,807) | (30.8) | (297,124) | (20.1) |
| Total | 356,780 | 100.0 | 1,476,274 | 100.0 |
| **All products** | | | | |
| Intra-East Asia | 270,465 | 38.5 | 1,139,821 | 44.9 |
| Inter-regional | 432,736 | 61.5 | 1,401,216 | 55.1 |
| (U.S.) | (174,978) | (24.9) | (473,093) | (18.6) |
| Total | 703,201 | 100.0 | 2,541,037 | 100.0 |

**(b) Factors of growth in exports (1990-2005)**

| | |
|---|---|
| **<Intra-East Asian exports>** | |
| (i) Growth in intra-East Asian exports | |
| All products | 321% |
| Machinery goods (total) | 522% |
| - Machinery final goods | 400% |
| - Machinery parts and components | 636% |
| (ii) Contribution to the growth (all products) | |
| Machinery goods (total) | 63% |
| - Machinery final goods | 23% |
| - Machinery parts and components | 40% |
| **<Inter-regional exports>** | |
| (i) Growth in inter-regional exports | |
| All products | 224% |
| Machinery goods (total) | 227% |
| - Machinery final goods | 173% |
| - Machinery parts and components | 335% |
| (ii) Contribution to the growth (all products) | |
| Machinery goods (total) | 59% |
| - Machinery final goods | 30% |
| - Machinery parts and components | 29% |

Data source: authors' calculation, based on UN COMTRADE

Note: "East Asia" here includes China, ASEAN4, NIES3, and Japan. Due to lack of data available from UN COMTRADE, (i) Taiwan is not included in East Asia, (ii) data for China in 1992 and Hong Kong in 1993 are used in calculating intra-East Asian exports in 1990, (iii) data for the Philippines are not included in calculating intra-East Asian exports in 1990. Growth rates are in nominal terms.

Source: Ando and Kimura (2009).

By employing the framework of two-dimensional fragmentation, we can list up a number of policies that make fragmentation viable in an organized way. Table 2 presents a 2x3 matrix, which consists of two dimensions of fragmentation and three kinds of cost reduction, i.e., the reduction in network set-up costs, service link costs, and production costs in production blocks. The table indicates that trade and investment liberalization is certainly an essential component but other policies such as trade facilitation, the development of logistics infrastructure, and various domestic policies are also important.

Table 2 Two-dimensional fragmentation and related policies

| | Reduction in fixed costs to develop production/distribution networks | Reduction in service link costs connecting production blocks | Further cost reduction in production cost per se in production blocks |
|---|---|---|---|
| Fragmention along the distance axis | Various policies to reduce investment costs | Various policies to overcome geographical distance and border effects | Varioous policies to strengthen location advantages |
| | Examples: (i) improvement in stability, transparency, and predictability of investment-related policies, (ii) investment facilitation in FDI-hosting agencies and industrial estates, (iii) liberalization and development in financial services related to capital investment | Examples: (i) reduction/removal of trade barriers such as tariffs, (ii) trade facilitation including simplification and improved efficiency in custom clearance/procedures, (iii) development of transport infrastracture and improved efficiency in transport and distibution services, (iv) development of telecommunication infrastructure, (v) improved efficiency in financial services related to operation and capital movements, (vi) reduction in costs of coordination between remote places by facilitation of the movement of natural persons | Examples: (i) establishment of educational/occupational institutions for personnel training to secure various types of human resources, (ii) establishment of stable and elastic labor-related laws and institutions, (iii) establishment of efficient international and domestic financial services, (iv) reduction in costs of intrastructure services such as electricity and other energy, industrial estates services, (v) development of agglomeration to facilitate vertical production chains, (vi) establishment of economic institutions such as investment rule and intellectual property rights, (vii) various trade and investment faciliation |
| Fragmentation along the disintegration axis | Establishment of economic environment to reduce set-up costs of arm's length transactions | Development of institutional environment to reduce the cost of implementing arm's length transactions | Various policies to strengthen competitiveness of potential business partners |
| | Examples: (i) establishemnt of economic system to allow co-existance of various business partners as well as making various types of contracts, (ii) various policies to reduce costs of information gathering on potencial business partners, (iii) securing fairness, stability, and efficiency in contracts, (iv) establishment of stable and effective institutions to secure intellectual property rights | Examples: (i) policies to reduce monitoring cost of business partners, (ii) improvement in legal system and economic institutions to activate dispute settlement mechanism, (iii) policies to promote technical innovations in modulation to further facilitate outsourcing | Examples: (i) hosting and fostering various types of business partners including foreign and indiginous firms, (ii) strengthening supporting industries, (iii) various policies to promote the formation of agglomeration |

It should also be noted that weights over these policies depend on the degree of participation in production networks. In the case of countries/regions that have not participated in production networks yet, set-up costs and service link costs for fragmentation in terms of the geographical distance are crucial. Production costs are also important, but some improvement of local niches, rather than the improvement of the whole economy, may suffice. At the stage of forming industrial agglomeration, overall improvement of cost conditions for geographical distance-type fragmentation becomes important, and the development of disintegration-type fragmentation should also be taken care of.

From the next section, we will assess how and to what extent these policy demands are met in the process of policy reform before the Asian currency crisis and FTA networking afterwards.

## 3. Before the Asian currency crisis: accumulation of small unilateral reform

AFTA was concluded in 1992 and started the liberalization process in 1993 in the midst of looking at the emergence of China as a powerful attractor of FDI. It certainly played a symbolic role in advertising ASEAN's intention to step forward to trade and FDI liberalization. However,

actual trade liberalization under the Common Effective Preferential Tariff (CEPT) scheme in AFTA moved very slowly before the Asian currency crisis. Even for the commodities with tariff reduction, preferential tariffs were rarely utilized.[2] Regionalism was not yet the focal effort of policy reform for production networks before the Asian currency crisis.

Major policy reform was initiated from Malaysia and Thailand in the mid-1980s. In the midst of serious recession, they decisively shifted their FDI-hosting policies from cautious and selective acceptance to aggressive attraction in most of the manufacturing sectors. Then competitive liberalization started among ASEAN countries at the end of the 1980s and the early 1990s, with being stimulated by emerging China under Deng Xiaoping's leadership. Policymakers in these countries did not probably have a clear idea of policy environment that would foster international production networks. Rather, by accumulating small unilateral reform in responding to issues and requests from multinationals, favorable environment for production networks gradually came into shape. At this stage, East Asia made a substantial breakthrough in its policy reform vis-à-vis other parts of the developing world such as Latin America.

Trade liberalization together with investment liberalization and facilitation in this era was substantial. In particular, tariffs imposed on machinery parts and components were reduced or completely removed unilaterally from the beginning of the 1990s, and such trade liberalization was further pursued under the initiative of Information Technology Agreement (ITA) in the latter half of the 1990s. We here observe "race to the bottom" type trade liberalization (Baldwin (2006)) where developing countries aggressively compete in attracting FDI and conduct trade liberalization.

We, however, have to be careful that notable trade protection was preserved for some key import-substituting industries dominated by national projects or old-style multinationals; such industries include automotives, electric appliances, iron and steel, petrochemicals, and others. Export processing zones (EPZs) were classical ways to reconcile inconsistency in trade regime, which catered coexistence of export-oriented industries and import-substituting industries. Although a number of EPZs in China, Singapore, Malaysia, and other countries accomplished considerable success in developing East Asia, the physical insulation of EPZs from domestic economies set a limit to actively promoting the formation of industrial agglomerations and the participation of local firms in production networks. Countries thus started introducing a variety of duty-drawback system with various investment incentives, in parallel with EPZs. Duty-drawback system allowed individual companies to import raw materials and intermediate goods free of customs duty if they are used in the production of exported goods. This is certainly a complicated system and is prone to having various troubles in implementation though it has been extensively used in East Asia. As a result, MNEs have had multiple choices in constructing their business models.

One of the consequences of the policy reform was the formation of extensive production networks in electronics industry including semiconductor, hard disk drives (HDD) as well as other modules, and computers themselves. International production networks in these industries became almost under free trade so that straightforward economic logic dominates in the formation of production networks. Parts and components in electronics industry are also suitable for fragmentation because of its physical property (small and light in weight vis-à-vis

[2] See Table 3 presented in the next section for low utilization ratios of preferential tariffs in 1998.

the value), advanced modular techniques, and the coverage of various production technologies. Because these industries are quantitatively important in international trade, trade statistics presents the proliferation of production networks though more complication came after that.

Production networks were primarily designed and operated by multinational enterprises (MNEs). MNEs with different firm nationalities have carried in various business models. Prototypes of production networks include vertical subcontracting among Japanese firms, horizontal subcontracting among Taiwanese firms, commissioned work system between Hong Kong and Guangdong, advanced modular method of the US high-tech companies, and others. East Asia provided an innovative open arena for generating novel business models with production networks. Although systematic empirical studies comparing business models are yet to come, it is obvious that MNEs with various firm nationalities have actively utilized the mechanism of fragmentation and agglomeration in East Asia.[3]

An unfortunate observation showing difficulties in partial liberalization is on the ASEAN Industrial Cooperation (AICO) Scheme with a deep commitment of Japanese automotive industry from the beginning. In order to break through slow regional trade liberalization process in automotive industry, the AICO Scheme tried to make a head start to formulate a region-wide production networks in an artificial way. However, ASEAN member countries, particularly uncompetitive in the automotive industry, did not allow imports of built-up cars and imposed a trade-balancing requirement. Japanese parts and components producers in the automotive industry tried hard to extend international transactions despite such constraints but in vein. We must wait for economically efficient formulation of production networks and industrial agglomerations in the automotive industry until the CEPT scheme accomplished substantial trade liberalization after the Asian currency crisis.

## 4. After the Asian currency crisis: FTAs specifically designed for production networks

By providing a hardship for countries in East Asia, the Asian currency crisis nurtured the regional concept of East Asia, and FTAs came up to a center stage in the effort of economic integration in the region. AFTA and bilateral FTAs between ASEAN and Japan were of particular importance in that these FTAs were deliberately designed for further activating production networks. Other FTAs such as ASEAN-China FTA (ACFTA) and ASEAN-Korea FTA (AKFTA) took a structure very similar to AFTA though the intention to serve for production networks was much thinner; trade liberalization does not often cover some key products in production networks, and WTO+ for activating production networks is barely included.

In the following, we will review the accomplishment of FTAs in the region from two aspects, i.e., restructuring import-substituting industries and further activating production networks. Then we will check the actual working of FTAs from the viewpoint of the usage of preferential tariffs and possible spaghetti/noodle bowl phenomenon.

[3] Ando, Arndt, and Kimura (2006) compare the sales and procurement behavior of the US and Japanese firms in East Asia and Latin America and find that location conditions are much more important than firm nationalities; i.e., both the US and Japanese firms actively utilize the advantages of production networks in East Asia while both do not in Latin America.

***Restructuring import-substituting industries in ASEAN***

Network-forming industries prefer free trade regime while import-substituting industries call for trade protection. Before the Asian currency crisis, the conflict between these two was partially reconciled by EPZs, duty-drawback system, and other policy arrangements. However, once the Asian currency crisis came, ASEAN member countries were forced to propose more drastic measures to keep attracting FDI. Inconsistency between two camps was noticed in both upstream and downstream of value chains. In the upstream, upstream industries such as iron and steel and chemicals were essential parts of production networks, and trade protection on these industries negatively affected network forming. In the downstream, slower integration of finished products such as automobiles and electric appliances, vis-à-vis electronic parts and components under vertical free trade, deterred more efficient location choices of production beyond national borders. There was of course resistance from companies and entrepreneurs who worked for national products as well as import-substituting multinationals, and thus collective effort in the region was required to remove trade barriers from these industries.

In this context, AFTA is a great success in the end and become one of the cleanest FTAs in terms of the liberalization coverage for trade in goods. Under the CEPT, each member country classified traded commodities into the inclusion list (IL), the temporary exclusion list (TEL), the general exception list (GEL), and the sensitive/highly sensitive list (SL/HSL) and gradually moved items from TEL, GEL, or SL/HSL to IL. By now, the original six member countries, i.e., Brunei, Indonesia, Malaysia, the Philippines, Singapore, and Thailand, have eliminated TEL and have retained GEL and SL/HSL only for strictly limited commodities (less than 1%). Commodities in IL are now with 0-5% tariffs, which are supposed to be zero by 2010.[4] Although AFTA has been criticized as a lenient FTA for long, it turns out to be a highly clean FTA in terms of the liberalization coverage.[5] In addition, ASEAN recently harmonized traded commodity classification system up to the most detailed level. Due to the advancement of AFTA, reshuffling of production sites in major import-substituting industries including electric alliances, automobiles, and others has clearly been accelerated, and transactions of finished products have also started increasing.

Bilateral FTAs between ASEAN and Japan have also contributed to cleaning up import-substituting industries in ASEAN. In Japanese bilateral FTAs with Brunei, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam, the zero-tariff coverage after ten years in terms of trade values on the ASEAN side is 99.94%, 90% (96% including iron and steel for specific use), 99%, 97%, 100%, 97%, and 88%, respectively. The zero-tariff coverage after ten years on the Japanese side is often lower though: 99.99%, 93%, 94%, 92%, 95% (97% after the five-year review), 92%, and 95%, respectively.[6] On the ASEAN side, the restructuring of import-substituting industries will surely be accelerated by the liberalization commitment

[4] Latecomers of ASEAN, i.e., Vietnam, Laos, Myanmar, and Cambodia, are obliged to eliminate tariffs for almost all commodities by 2015 or 2018.

[5] As of August 2008, the percentage of tariff lines with zero tariffs is 85.4% in Brunei, 80.0% in Indonesia, 82.6% in Malaysia, 82.9% in the Philippines, 100% in Singapore, and 80.0% in Thailand, which clear the interim target of 80%. The average tariff rates are 1.95% for ASEAN10 and 0.97% for ASEAN6 in 2008. See JETRO (2009, p. 24).

[6] These figures are obtained from the homepage of the Ministry of Foreign Affairs, Government of Japan (http://www.mofa.go.jp/). Note that the measurement of liberalization coverage in terms of trade values is sensitive to the trade pattern in the base year, which may not properly reflect high spikes of protection. Kuno and Kimura (2008) show that the liberalization coverage of some bilateral FTAs concluded by Japan in terms of the number of tariff lines is substantially lower than the announced figures based on trade values.

though some protection will be left over.[7] The lower liberalization coverage on the Japanese side is primarily due to heavy protection on agriculture-related commodities.[8] The asymmetric liberalization commitments are the reflection of Japan's negotiating power in Southeast Asia as well as the existence of side payments in the form of investment promotion and economic/technical cooperation committed by Japan.

The recently concluded ASEAN-Japan FTA (AJCEP) applies the CEPT-style tariff reduction scheme. On the Japanese side, 90% of commodities (in terms of trade values) will have immediate tariff removals, additional 3% will have within-ten-year gradual tariff removals, and the rest will be excluded from liberalization or have certain reduction of tariffs. As for ASEAN6, 90% (in terms of both trade values and the number of tariff lines) will have immediate tariff removals or within-ten-year gradual tariff removals, and the rest will be excluded from liberalization or have certain reduction of tariffs. ASEAN latecomers will have a looser schedule of tariff removals or reduction. These commitments are slightly higher than ACFTA and AKFTA though additional liberalization effects do not seem to be large.

***Further activating production networks***

In East Asia, WTO+ strongly works. The context, however, is not for pursuing the legal comprehensiveness of economic integration for solid institutionalization. Rather, the motivation of introducing WTO+ is pragmatic for responding to large and small requests of private sector extending international production networks. In the end, facilitation and cooperation are often emphasized more than liberalization.

Particularly Japanese bilateral FTAs with ASEAN were specifically designed to serve for production networks, which include trade facilitation such as customs procedure, the establishment of business-governments dialogues, and economic and technical cooperation. A series of these small measures are specifically designed so as to reflect issues and requests listed by Japanese multinationals operating production networks.[9]

The emphasis on investment liberalization and facilitation is another aspect of importance. Japanese bilateral FTAs with ASEAN always include investment chapters, and Japan also concluded bilateral investment treaties with Cambodia (signed in June 2007) and Laos (signed in January 2008). These intend to explore investment liberalization including pre-entry and post-entry national treatment, ban on some performance requirements, and investment facilitation in addition to investment protection. These obviously reflect interests of production networks.

ASEAN Economic Community (AEC) initiative is an ambitious effort to extend the effort of AFTA to a wide range of policy modes but is not yet well organized to serve production

[7] Politico-economic structure of FTA negotiations sometimes causes skewed results. For example, Japan forced Malaysia to make a within-10-year liberalization commitment on the automotive sector while the Japan-Thailand Economic Partnership Agreement allows Thailand to keep some trade protection on the sector.

[8] As for the agricultural protection in FTA negotiations by Japan, see Ando and Kimura (2008) and Mulgan (2008a, 2008b). Kuno and Kimura (2008) analyze the nature of heavily protected agricultural products focusing on their geographical concentration of production in Japan. Low coverage of liberalization for agricultural products becomes an obvious obstacle to Japan's further extending FTA strategies.

[9] Ando (2007) finds the substantial effectiveness of these small measures in improving business environment in the context of Japan-Mexico FTA. Similar observation will surely be accumulated in a more explicit manner for bilateral FTAs between ASEAN and Japan after being effective for a few years.

networks in the region. Various trade facilitation measures including national/regional single window and other initiatives are going to have beneficial effects. Services and investment are recently about to be included in ACFTA and AKFTA. However, the contents are not well beyond the GATS commitment on the MFN basis and elementary ingredients of investment protection.
It should be noted that most of the measures of trade and investment facilitation would be applied on the MFN basis rather than infamous discriminatory basis. In other words, firms in any firm nationality can enjoy the betterment of policy environment by FTAs. This is an important characteristic of competing FTAs in an open setting.

***The usage of preferential tariffs***

How far FTAs are actually working can be checked by the utilization ratios of preferential tariffs. Thailand and Malaysia disclose the data of FTA utilization on the official customs data basis. Table 3 presents two countries' exports with utilizing the CEPT scheme of AFTA. As of 1998, CEPT was barely utilized, which confirms the old criticism. However, the utilization ratios have substantially increased since then. In 2007, 31% of Thailand's intra-ASEAN exports and 19% of Malaysia's intra-ASEAN exports utilize CEPT where exports to Singapore are excluded because MFN-applied import tariffs in Singapore are zero for almost all products. These ratios are not small because the denominator, total intra-ASEAN exports, includes exports of commodities for which MFN import tariffs are already zero or very low particularly under ITA and for which EPZs scheme and duty-drawback system are applied as investment incentive.

Table 3

Exports utilizing AFTA (CEPT) and their shares in total exports in Thailand and Malaysia

(Millions of dollars, %)

| | Export destination | Exports utilizing CEPT | | | | | Share in total exports | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | country/region | 1998 | 2003 | 2005 | 2006 | 2007 | 1998 | 2003 | 2005 | 2006 | 2007 |
| Total for | Vietnam | 7 | 632 | 1,343 | 1,763 | 2,772 | 0.8 | 30.3 | 38.3 | 36.3 | 43.2 |
| Thailand and | Philippines | 179 | 748 | 1,333 | 1,529 | 1,928 | 9.3 | 24.9 | 33.2 | 32.0 | 34.1 |
| Malaysia | Indonesia | 99 | 913 | 2,468 | 2,231 | 3,530 | 5.0 | 20.6 | 33.9 | 30.1 | 34.3 |
| | Malaysia | 212 | 801 | 1,270 | 1,363 | 1,850 | 11.9 | 20.7 | 22.4 | 20.5 | 22.1 |
| | Thailand | 91 | 594 | 1,227 | 1,270 | 1,206 | 3.9 | 13.0 | 16.2 | 14.9 | 13.8 |
| | Brunei | 0 | 2 | 5 | 14 | 15 | 0.1 | 0.7 | 1.3 | 3.3 | 3.0 |
| | Singapore | 17 | 247 | 393 | 382 | 445 | 0.1 | 1.1 | 1.3 | 1.2 | 1.2 |
| | Laos | 0 | 4 | 22 | 23 | 30 | 0.0 | 0.9 | 2.8 | 2.3 | 2.1 |
| | Myanmar | 0 | 2 | 6 | 4 | 13 | 0.0 | 0.4 | 0.6 | 0.4 | 1.0 |
| | Cambodia | 0 | 0 | 1 | 1 | 1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| | Total | 606 | 3,942 | 8,066 | 8,580 | 11,789 | 2.2 | 9.3 | 13.3 | 12.4 | 14.7 |
| | Total (excl. Singapore) | 589 | 3,696 | 7,673 | 8,198 | 11,345 | 5.6 | 18.4 | 24.6 | 22.8 | 25.7 |
| Thailand | Total | 391 | 2,561 | 5,146 | 5,509 | 7,865 | 4.0 | 15.5 | 21.5 | 20.2 | 22.5 |
| | Total (excl. Singapore) | 383 | 2,454 | 4,942 | 5,299 | 7,609 | 7.4 | 23.0 | 30.0 | 28.2 | 30.9 |
| Malaysia | Total | 214 | 1,382 | 2,921 | 3,071 | 3,924 | 1.2 | 5.3 | 7.9 | 7.3 | 8.7 |
| | Total (excl. Singapore) | 206 | 1,242 | 2,731 | 2,898 | 3,736 | 3.8 | 13.2 | 18.5 | 16.9 | 19.1 |

Original sources; Malaysia Ministry of International Trade and Industry, Thailand Ministry of Commerce, trade statistics of Thailand and Malaysia.

Source: JETRO (2008, Table II-12).

Table 4 tabulates exports utilizing various FTAs by Thailand and Malaysia. ACFTA and AKFTA do not seem to be well utilized so far, perhaps due to the slow liberalization process or the low public awareness. On the other hand, the Thailand-Australia FTA and the Early Harvest Scheme items in the Thailand-India FTA present very high utilization ratios, 66% and 98% respectively in 2007, utilizing production and distribution networks. Table 4 presents FTA utilization in imports by Thailand. While FTAs with China and India are barely used, AFTA, Thailand-Australia FTA, and Thailand-New Zealand FTA are relatively well utilized.

| Table 4 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Exports utilizing FTAs and their shares in total exports in Thailand and Malaysia | | | | | | | | | |
| (Millions of dollars, %) | | | | | | | | | |
| | Export destination | Exports utilizing FTAs | | | Share in total exports | | | | |
| | country/region | 2005 | 2006 | 2007 | 2005 | 2006 | 2007 | | |
| Thailand | ASEAN (excl. Singapore) | 4,942 | 5,299 | 7,609 | 30.0 | 28.2 | 30.9 | | |
| | China | 614 | 1,450 | 1,769 | 6.7 | 12.3 | 11.1 | | |
| | India | 267 | 328 | 399 | 17.6 | 18.1 | 14.0 | | |
| | (82 items in the Early Harvest Scheme) | 267 | 328 | 399 | 79.0 | 89.1 | 98.1 | | |
| | Australia | 2,122 | 2,746 | 4,067 | 67.3 | 62.6 | 66.2 | | |
| Malaysia | ASEAN (excl. Singapore) | 2,731 | 2,898 | 3,736 | 18.5 | 18.4 | 19.1 | | |
| | China | 274 | 1,043 | 1,629 | 2.9 | 8.9 | 10.0 | | |
| | South Korea | | | 403 | | | 11.1 | | |
| Total | ASEAN (excl. Singapore) | 7,673 | 8,197 | 11,345 | 24.6 | 22.8 | 25.7 | | |
| | China | 888 | 2,493 | 3,398 | 4.8 | 10.6 | 10.8 | | |
| | China-ASEAN (excluding Singapore) | 8,561 | 10,690 | 14,743 | 17.2 | 18.0 | 19.5 | | |
| Note: Malaysia's trade with South Korea is for June-December 2007. | | | | | | | | | |
| Original sources; Malaysia Ministry of International Trade and Industry, Thailand Ministry of Commerce, trade statistics of Thailand and Malaysia. | | | | | | | | | |
| Source: JETRO (2008, Table II-13). | | | | | | | | | |

| Table 5 | | | | |
|---|---|---|---|---|
| FTA utilization in imports by Thailand, 2007 | | | | |
| (Millions of dollars, %) | | | | |
| | | Imports utilizing FTA | Ratio of imports utilizing FTA to the total dutiable imports | |
| Exporting country/region | ASEAN | 3,053 | 20.5 | |
| | China | 379 | 3.7 | |
| | India | 35 | 3.3 | |
| | Australia | 437 | 31.4 | |
| | New Zealand | 156 | 44.4 | |
| | Total | 4,060 | 14.5 | |
| Note: "The total dutiable imports" include imported goods with positive MFN tariffs. | | | | |
| Original source: Thailand Ministry of Commerce and trade statistics of Thailand. | | | | |
| Source: JETRO (2008, Table II-15). | | | | |

Although the firm-specific impact of FTAs has not systemically been studied yet, some useful information is available, only for Japanese firms. Japan External Trade Organization (JETRO) annually conducts an extensive questionnaire survey on foreign affiliates of Japanese firms, which recently starts including questions related to FTA utilization. The new results (JETRO (2009, p. 22-30)) show that among manufacturing affiliates of Japanese firms in ASEAN conducting exporting activities, 23.0% use FTAs, and 23.3% consider using FTAs. Among those with importing activities, 19.7% use FTAs, and 24.4% consider using FTAs.

The questionnaire further asks affiliates not even considering using FTAs for reasons why. Among exporting affiliates without any intention of utilizing FTAs, 37.6% of them say "duty-drawback system on the import side exists," 22.9% claim "there does not exist a FTA with trading partners," and 19.9% state "MFN tariffs at destination are low so that FTAs are not advantageous." Very small proportion of exporting affiliates raises troublesome administrative procedures or their ignorance of FTAs as reasons for not utilizing FTAs. Similarly, among importing affiliates without any intention of utilizing FTAs, 48.9% of them say "duty-drawback system for imports are applied," 13.4% claim "domestic sales on which tariffs are imposed is small," 13.1% state "there does not exist a FTA with trading partners," and 12.8% advocate "MFN tariffs are already low."

The questionnaire also asks some additional questions. One is the minimal preferential margin with which exporting affiliates stop using MFN tariffs and start utilizing FTAs. The average margin across exporting affiliates located in ASEAN is 5.2%. Another is the preferential tariff rate equivalent to the administrative cost of obtaining duty-drawback system. The average across importing affiliates located in ASEAN is 1.9%.

Hayakawa, Hiratsuka, Shiino, and Sukegawa (2009) employ the micro data of JETRO survey and regress the utilization of FTAs on individual affiliates' characteristics. They find that the utilization of FTAs or the intention to utilize FTAs is positively associated with the size of affiliates and negatively associated with the number of commodity items with zero tariffs. The relationship with the proportion of local procurement presents an inverted-U pattern.

Overall, considering the existence of other policy arrangements to avoid being taxed such as zero MFN tariffs, duty-drawback system, and others, the utilization of FTAs seems to be fairly high in ASEAN. However, further facilitation for utilizing FTAs may be required, particularly for small and medium enterprises.

***Do overlapping FTAs cause serious problems?***

East Asia is now covered by a hub-and-spoke FTA networking with overlapping FTAs (Table 6). Some people claim that such a complicated, uncoordinated system of international trade should cause serious malfunctioning in international trade system, particularly for international production networks. The popularity of the word "spaghetti bowl phenomenon" or "noodle bowl phenomenon" tells a vague discomfort that is shared by many people. However, the view on overlapping FTAs has recently changed drastically among businessmen working for production networks.

## Table 6: FTA Networking in Extended East Asia

Table 6 FTA networking in extended East Asia

(As of March 2009)

| | Japan | Korea | China | ASEAN | Brunei | Indonesia | Malaysia | Philippines | Singapore | Thailand | Vietnam | CLM | India | Australia | New Zealand |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Japan | | ○ (suspended) | △ | ◎: 2008 - | ◎: 2008 | ◎: 2008 | ◎: 2006 | ◎: 2008 | ◎: 2002 | ◎: 2007 | ◎ | | ○ | ○ | |
| Korea | ○ (suspended) | | △ | ◎: 2007 - | | | | | ◎: 2006 | | | | ○ | ○ | ○ |
| China | △ | △ | | ◎: 2005 - | | | | | ◎: 2009 | | | | △ | ○ | ◎: 2008 |
| ASEAN | ◎: 2008 - | ◎: 2007 - | ◎: 2005 - | ◎: 1993 - | (1992) | (1992) | (1992) | (1992) | (1992) | (1992) | (1995) | (LM:1997/C:1999) | ○* | ◎ | ◎ |
| Brunei | ◎: 2008 | | | (1992) | | (1992) | (1992) | (1992) | (1992) | (1992) | (1995) | (LM:1997/C:1999) | | | ◎: 2006 |
| Indonesia | ◎: 2008 | | | (1992) | (1992) | | (1992) | (1992) | (1992) | (1992) | (1995) | (LM:1997/C:1999) | | △ | |
| Malaysia | ◎: 2006 | | | (1992) | (1992) | (1992) | | (1992) | (1992) | (1992) | (1995) | (LM:1997/C:1999) | ○ | ○ | △ |
| Philippines | ◎: 2008 | | | (1992) | (1992) | (1992) | (1992) | | (1992) | (1992) | (1995) | (LM:1997/C:1999) | | | |
| Singapore | ◎: 2002 | ◎: 2006 | ◎: 2009 | (1992) | (1992) | (1992) | (1992) | (1992) | | (1992) | (1995) | (LM:1997/C:1999) | ◎: 2005 | ◎: 2003 | ◎: 2001 |
| Thailand | ◎: 2007 | | | (1992) | (1992) | (1992) | (1992) | (1992) | (1992) | | (1995) | (LM:1997/C:1999) | △ | ◎: 2005 | ◎: 2005 |
| Vietnam | ◎ | | | (1995) | (1995) | (1995) | (1995) | (1995) | (1995) | (1995) | | (LM:1997/C:1999) | | | |
| CLM | | | | (LM:1997/C:1999) | (LM:1997/C:1999) | (LM:1997/C:1999) | (LM:1997/C:1999) | (LM:1997/C:1999) | (LM:1997/C:1999) | (LM:1997/C:1999) | (LM:1997/C:1999) | | | | |
| India | ○ | ○ | △ | ○* | | | ○ | | ◎: 2005 | △ | | | | △ | △ |
| Australia | ○ | ○ | ○ | ◎ | | △ | ○ | | ◎: 2003 | ◎: 2005 | | | △ | | ◎: 1983 |
| New Zealand | | ○ | ◎: 2008 | ◎ | ◎: 2006 | | △ | | ◎: 2001 | ◎: 2005 | | | △ | ◎: 1983 | |

Notes: ◎: signed or being effective, ○: under negotiation or agreed to negotiate, ○*: negotiation completed, △: feasibility study or preparatory talks. The year indicates when the concerned FTA was in force. "-" after the year means that some ASEAN countries are under the corresponding FTAs in force and other countries follow later. Dark blue indicates FTAs signed before or in the 1990s, blue indicates FTAs signed in the first half of the 2000s, and light blue indicates FTAs signed in the second half of the 2000s. For some FTAs, their status in this table is based on the agreement of trade in goods; negotiations may be still ongoing over other areas such as investment and services even if the agreements are identified as those signed or being effective here. The year in parenthesis shows the year for the corresponding ASEAN country to be the member of ASEAN/AFTA.

Sources: Websites of trade ministries in each country and others including JETRO website (http://www.jetro.go.jp/world/).

One big concern is on rules of origin (RoO). So-called spaghetti bowl or noodle bowl phenomenon refers to trade deterrent effects that are generated by the complication of trade regime, particularly regarding RoO, due to the unorganized proliferation of bilateral/plurilateral FTAs. However, the logic of trade deterrence due to additional FTA is not very clear. Adding another FTA on the top of existing FTAs would certainly enhance the complexity of trade regime. However, if private people think a new preferential tariff system too complicated, they will simply continue to use MFN tariff system or other FTAs. It is unlikely that additional FTA reduces trade; instead, the issue we concerned should be whether additional FTA promotes trade or not. In this sense, RoO may indeed work as a counteracting force against trade liberalization by FTAs. Strict and unfriendly RoO may act for protectionism by nullifying the usage of preferential arrangements.

Estevadeordal, Harris, and Suominen (2007) provide an extensive survey on RoO in FTAs in the world. They conclude that RoO in intra-Asian FTAs tend to be less restrictive and complex than their counterparts in Europe and the Americas. Sample firm surveys in East Asian countries conducted by Kawai and Wignaraja (2009) suggest unexpectedly little Spaghetti/noodle bowl phenomena though further facilitation seems to be needed. We are accumulating evidences that RoO in FTAs in East Asia have not worked as a major obstacle to promoting freer trade.

Medalla and Balboa (2009) carefully examine RoO in FTAs in East Asia, review best practices in applying RoO, and propose a direction for improvement. One of their important conclusions is that alternative or co-equal system of RoO is less restrictive than other arrangements and is thus to be promoted. RoO is classified by the testing methodology in identifying the origin of goods. Frequently used tests are the value-added measure test, the tariff heading criterion test, the specified processes test, and the combination of these, "both" or "either." The value-added measure test looks simple in text but is not user-friendly for some products such as machineries consisting of numerous parts and components. A practical way of avoiding unnecessary user cost as well as saving the cost of negotiation is an alternative or co-equal system in which meeting one of the designated tests, for example, either the value-added measure test or the tariff heading criterion test, may suffice.

Table 7 tabulates the number of tariff lines applying various types of RoO in AFTA, ACFTA, AKFTA, and AJCEP. ACFTA reflects an old style of RoO that applies the value-added measure test or regional value content (RVC) test for large number of tariff lines. AFTA used to have a similar pattern but recently switched to a co-equal system applying either RVC test or tariff heading criterion test (CC, CTH, or CTSH in the table) for a large number of tariff lines. AKFTA and AJCEP also apply co-equal system extensively.

What we found in this argument on RoO is that the proliferation of overlapping FTAs may not be a real evil. It would of course be better if an efficient, consolidated FTA covering the whole region were concluded. However, the construction of such a massive system would require a lot of time and energy. As far as overlapping FTAs pursue freer trade, we may rather live with some complexity of the system. This is a major mental breakthrough that we have recently experienced.

### 5. Is further institutionalization accelerated by the logic of production networks?

Production networks have always played a major role in generating economic dynamism in East Asia since the 1990s, and regionalism in this region has reflected policy demand coming from the economic logic. In particular, AFTA and bilateral FTAs between ASEAN and Japan have contributed to further activating production networks in the region. Now the question is whether the logic of production networks would request further institutionalization of regionalism or not. I would like to temporarily make three points related to this issue.

First, the current system of overlapping FTAs seems to gain a certain level of appreciation though some of FTAs are not very active yet at this moment. Spaghetti/noodle bowl phenomenon was not crucially serious and can at least be lived with. If overlapping FTAs generate competitive liberalization, it must be promoted for keeping economic dynamism. And from the very nature of production networks, the private sector seems to prefer FTA networking in an open setting to a deep integration in a closed setting at least in the short run. Consolidating FTA is not a desperate immediate need of private sector, with considering the time and energy that would be required.

| Table 7 | | | | |
|---|---|---|---|---|
| RoO in AFTA, ACFTA, AKFTA, and AJCEP | | | | |
| RoO type | AFTA | ACFTA | AKFTA | AJCEP |
| WO | 169 | 8 | 465 | 3 |
| CC | | 1 | 61 | 1,344 |
| CTH | | | 2 | 434 |
| CTSH | | | | 8 |
| RVC(>40) | | | 36 | |
| RVC(40) | 146 | 4,659 | 22 | 219 |
| RVC(<40) | | | 2 | |
| CC + RVC(40) | | | 2 | 1 |
| CTH + RVC | | | 4 | |
| CC or RVC(40) | 564 | 7 | 487 | 126 |
| CTH or RVC(>40) | | | 4 | |
| CTH or RVC(40) | 2,583 | 122 | 4,078 | 3,056 |
| CTSH or RVC(40) | 689 | | 61 | 33 |
| RVC(40) or Textile Rule | | 427 | | |
| CC or RVC(40) or Textile Rule | 300 | | | |
| CTH or RVC(40) or Textile Rule | 327 | | | |
| Total with alternate rules | 4,463 | 556 | 4,630 | 3,215 |
| NA | 446 | | | |
| Total | 5,224 | 5,224 | 5,224 | 5,224 |
| WO: wholly obtained | | | | |
| CC: change in commodity classificaiton | | | | |
| CTH: change in tariff heading | | | | |
| CTSH: change in tariff subheading | | | | |
| RVC: regional value content | | | | |
| Source: Medalla and Balboa (2009). | | | | |

Second, however, it does not mean that consolidated, plurilateral framework with further institutionalization would be useless. From the viewpoint of private companies engaged in production networks, the FTA connection among Japan, Korea, and China is certainly important. Plurilateral RoO may help them expand the scope of production networks. Various initiatives for trade facilitation such as ASEAN single windows must be promoted in a plurilateral framework rather than bilateral. More reliable implementation system is certainly called for. Furthermore, the extent of production networks is limited to a small portion of developing East Asia; the mechanics of fragmentation and production networks can be utilized for pursuing both deepening economic integration and narrowing development gaps. It is important for economists and political leaders to list up such items in a comprehensive manner and deliberately organize the support for promoting further institutionalization. Right now, the support of private sector on regionalism is losing steam a bit. People think that what we can do

with international commercial policies is almost done, and their interest seems to shift, at least temporarily, to other issues such as logistics infrastructure development and financial cooperation.[10]

Third, can AEC be a core of institutionalization of regionalism in East Asia? ASEAN is a hub of FTA system in extended East Asia consisting of ASEAN+6, and thus it would be natural for ASEAN to lead deeper, more institutionalized economic integration. AEC is a bold effort to pursue deeper economic integration and lead the region. ASEAN Economic Community Blueprint (2008) covers a wide scope of policy modes with ASEAN flavor (see Table 8). However, it does not reach the level of sophistication that neighboring countries including fully developed countries can accept as it is for further economic integration. We actually need to check the feasibility, relevance, and priority of the contents of AEC Blueprint in great details and realign the roadmap toward deeper economic integration.[11]

* * *

In conclusion, East Asian economic integration has ample room for further institutionalization, which would be certainly beneficial. However, the logic of production networks alone does not seem to take an initiative for it at least in the short run. With the current framework of overlapping FTAs, ASEAN and East Asia must go step by step toward deeper economic integration. The wave of institutionalization may come earlier from the movement in Asia-Pacific rather than in East Asia.

[10] Hayakawa and Kimura (2009) employ the gravity equation method and prove that the past exchange rate volatility penalizes machinery parts and components trade in East Asia. Obashi (2009) applies the Kaplan-Meier method as well as the survival analysis and verifies that international production networks are resilient against external shocks. These observations suggest the existence of large entry/exit cost in formulating and operating production networks. Stable economic environment with stronger institutionalization of regional economic integration is clearly vital to the further development of production networks.

[11] This is one of the missions that the Economic Research Institute for ASEAN and East Asia (ERIA) is working for.

| Table 8 | | |
|---|---|---|
| Characteristics and elements of AEC | | |
| | | Highilighted topics |
| A. Single market and production base | | |
| | A1. Free flow of goods | Elemination of tariffs, elimination of non-tariff barriers, rules of origin (ROO), trade facilitation, customs integration, ASEAN Single Window, standards and technical barriers to trade |
| | A2. Free flow of services | Services liberalization under AFAS, mutual recognition arrangements (MRAs), financial services sector |
| | A3. Free flow of investment | Investment protection, facilitation and cooperation, promotion and awareness, liberalisation |
| | A4. Freer flow of capital | Strengthening ASEAN capital market development and integration, allowing greater capital mobility, foreign direct investment, portfolio investment, other types of flows, capital account transactions, facilitation |
| | A5. Free flow of skilled labour | |
| | A6. Priority integration sectors | Twelve sectors |
| | A7. Food, agriculture and forestry | Enhancing competitiveness, cooperation, agricultural cooperatives |
| B. Competitive economic region | | |
| | B1. Competition policy | |
| | B2. Consumer protection | |
| | B3. Intellectual property rights (IPR) | |
| | B4. Infrastructure development | Transport cooperation, land transport, maritime and air transport, information infrastructure, energy cooperation, mining cooperation, financing of infrastructure projects |
| | B5. Taxation | |
| | B6. E-commerce | |
| C. Equitable economic development | | |
| | C1. SME development | |
| | C2. Initiative for ASEAN Integration (IAI) | |
| D. Integration into the global economy | | |
| | D1. Coherent approach toward external economic relation | |
| | D2. Enhanced participation in global supply networks | |
| Source: ASEAN (2008). | | |

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