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THE “MAQUILA” LESSONS AND IMPLICATIONS TO THAI-MYANMAR BORDER DEVELOPMENT

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ABSTRACT

This paper aims to extract the lessons from the “Maquila” history of the US-Mexico border development and to present their policy implications to the upcoming Thai-Myanmar border development. The “Maquila” system, the Mexican “in-bond processing” program is said to be the most successful case as border area development in the world, since it has contributed a lot to the development of Mexican economy as well as of the US border cities from its spillover effects, though it has faced several challenges under fierce global competition. The Maquila-wise system is definitely required in Thai-Myanmar border development both for the job creations in Myanmar side and for the industrial reformation in Thailand side. Careful designing of in-bond processing system, enhancing outer-link connectivity from borders to central cities, and labor skill development are the policy implications obtained from the Maquila lessons.

Keywords: The maquila, US-Mexico border development, Job creations, In-bond processing, Thai-Myanmar border development, Road networks, Labor skills.

JEL Classification Codes: F23, N60, O24, O53.

1. INTRODUCTION

This paper aims to extract the lessons from the “Maquila” history of the US-Mexico border development and to present their policy implications to the upcoming Thai-Myanmar border development. The “Maquila” is said to be the most successful case as border area development in the world. The “Maquila” is, in a word, the Mexican “in-bond processing” program in its manufacturing sector, and it has contributed a lot to the development of Mexican economy as well

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as of the US border cities from its spillover effects, though it has faced several challenges under fierce global competition in recent times.

Myanmar has drastically facilitated its political and economic reformation with its open-door policy since 2011, and its border area development can be one of the important strategies to attain "balanced, proportionate and inclusive growth" declared by President U Thein Sein as the second phase of reform strategy in June, 2012. In particular, creating job opportunities in its border areas where most of minority groups are living, would contribute to stabilizing the society and economy.

On the other hand, the border areas in Thailand side are facing the serious and urgent needs to reform their industrial structure, since the areas where labor-intensive industries are intensively located are suffering the hike of labor costs due to the minimum-wage raise since 2012. In these contexts in both countries, one of the solutions can be a "fragmentation"[1], in which the labor-intensive production processes are relocated from Thailand borders to Myanmar borders where lower-wage workers are available. For Myanmar side, the acceptance of production bases as the fragments of production networks may contribute to its border area development, especially job creations in the areas, whereas for Thailand side the outsourcing of the labor-intensive production may save labor costs and make it easier for the border industries to concentrate on the higher value-added processes. In this sense, the "fragmentation" would be a win-win game for both countries, and the 'in-bond processing" would be a preferable system to promote the "fragmentation". Thus, it is significant to review the forerunner's case of the "in-bond processing" system typically seen in the" Maquila", and learn the lessons – what should be done or should not be done.

The paper is structured as follows. Section 2 outlines the content, historical performances, recent challenges and lessons of the "Maquila" program. Section 3 focuses on the significance of the border area development between Thailand and Myanmar, and the policy implications obtained from the "Maquila" lessons. The concluding remarks are presented in the last Section 4.

2. THE MAQUILA PROGRAM: HISTORY AND LESSONS

This section describes the content, historical performances, recent challenges and lessons of the Maquila program. We first clarify the definition of the Maquila program.

2.1. The Maquila Program

We herein highlight the essence of the original program basically by referring to Baz (2007). The Maquila program is essentially an "in-bond processing" system and its precise definition is shown by Baz (2007) as follows.

"A Maquila program entitles the company, first, to foreign investment participation in the capital -- and in management -- of up to 100% without need of any special authorization; second, it entitles the company to special customs treatment, allowing duty free temporary import of machinery, equipment, parts and materials, and administrative equipment such as computers, and communications devices, subject only to posting a bond guaranteeing that such goods will not remain in Mexico permanently."

[1] See the later section 3.1.

The "Maquiladora" that is often referred to is a Mexican Corporation which operates under the Maquila program approved for it by the Mexican Secretariat of Commerce and Industrial Development. The Maquiladora's location is not confined to the border areas between Mexico and the US, and its decision is entirely up to the company excepting the metropolitan areas.[2] Their actual locations are, however, concentrating on the border areas at least in the earlier times. Another important element of the Maquila program is that the program permits the Maquiladora to bring whatever professional or personnel to serve as managers, technicians and other specialists. These foreigners can obtain non-immigrant visas, effective for six months and renewable as often as may be necessary.

These in-bond processing system has been an instrument to subsidize such foreign manufacturers as the US mother factories that set up their twin plants on the Mexico side of the border for processing and assembling their products on commission. The processed and assembled products in Mexico are re-exported by no less than 80 percent again to the US with a low import duty on the value-added in Mexico. The US-GSP (Generalized System of Preferences) that allows duty-free entry is also applied in case 35 percent or more of the product is deemed Mexican content. This program has contributed to Mexican economy in terms of job creations, a vehicle for the technology transfer and a measure to get hard currency, while it has also provided the opportunities for the US businesses to benefit from investment in Mexico by utilizing Mexican cheap labors and its proximity to the US market. The bird's-eye picture of the program is shown in Figure 1.

2.2. Historical Performances

The Maquila program, initially called the Border Industrialization Program, started in 1965 as response to the termination of the Bracero Program by the US in 1964. The Bracero Program had allowed Mexican migrants to work legally in the US on a seasonal basis to fulfill the US agricultural labor demand. The end of the Program had left thousands of unemployed workers in Mexican border areas. The Maquila program was born to alleviate the resultant unemployment and growing poverty along the borders. The first two industrial parks were built in Ciudad Juárez across from El Paso in Texas State, and Nogales across from Nogales in Arizona State. Tijuana and Mexicali across from San Diego and Calexico in California State, and Reynosa and Matamoros across from McAllen and Brownsville in Texas State followed (Figure 2).

The Maquila enjoyed its heydays in the 1980s and the 1990s. The first background was the peso devaluations in 1982 and 1994. Since most Maquiladoras have dollar-denominated budgets but pay costs in peso, the devaluation substantially reduced peso-denominated costs, and it attracted more foreign companies to Mexico. Second, Mexico joined free trade frameworks during this period. Mexico joined GATT in 1986, signed a free trade agreement with Chile in 1992, joined Asia-Pacific Economic Cooperation (APEC) in 1993, and joined NAFTA with the US and Canada in 1994. Consequently maximum tariff rates in Mexico fell from 60 percent to 15 percent by 1990.[3]

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[2] All location restriction was eliminated by the early 1990s. See Canas and Gilmer (2009).

[3] See Secretaría de Economía, www.economia.gob.mx.

Based on these backgrounds, the Maquila in the 1980s and the 1990s had shown excellent performances in Mexican economy. According to Gorjidooz and Vasigh (2009), the manufacturing production in Maquiladora had grown twofold from 1993 to 2000; the employment and new establishments in the Maquiladora, recording double-digit growth in the 1980s and the 1990s[4], reached their highest levels in 2000: 3,700 plants and 1.3 million employment (which accounted for about a third of Mexico's manufacturing jobs[5]); and Maquiladora exports accounted for half of Mexico's total exports. In addition, Canas and Coronado (2002) showed that the Maquiladora industry generated more than 19 billion US dollars in foreign exchange in 2001, which had been Mexico's top foreign exchange generator since 1998. The Maquila had also brought good impacts on the US economy through the spillover effects on the US border city's employment. Hanson (2001), in its comprehensive research to estimate the impact of Maquiladoras on the entire US-Mexico border employment and wages, found that a 10 percent increase in Maquiladora's production in Mexican border cities leads to a 1.1 to 2.0 percent employment increase in the US border cities. Mollick *et al.* (2006) also estimated that a 10 percent increase in Maquiladora value added generates a 0.88 percent employment growth in El Paso and 1.41 percent employment growth in Brownsville. Canas *et al.* (2011), in updating Hanson (2001)'s results using data from 1990 to 2006, found that the impact of a 10 percent increase in Maquiladora production still keeps at a 0.5 to 0.9 percent increase in employment in the US border cities, emphasizing that the US border city-employment along the Texas-Mexico border, particularly, in service-sectors, benefits the most from growing Maquiladora production.

2.3. Recent Challenges

We next pick up three major challenges for the Maquila: the Maquila vulnerability to the US business cycle, fierce global competition, and inconsistency of the Maquila framework.

A) The Maquila Vulnerability to the US Business Cycle

The Maquila manufacturing production had faced its serious downturn from October 2000 toward 2003. Between October 2000 and March 2002, the Maquila industry lost 278,000 jobs, a 21 percent decline.[6] Acevedo (2003) estimated that as the primary causes of the Maquila downturn, 80 percent of the decline in Maquiladora exports was due to a decline in the US demand for Maquiladora products caused by the 2001 US recession. The 2008-2009 Lehman-Shock is also said to give economic damages on the Maquila industry.[7] In these ways, the Maquila industry is vulnerable and sensitive to the US business cycle, and it is not surprising if we consider that the Maquila production is often linked to the US manufacturing through production networks and that approximately 95 percent of the Maquila production is destined for the US market.[8] The Maquila

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[4] According to Canas and Coronado (2002). overall Maquiladora employment had increased 300-fold since 1967 by 2001.

[5] See Canas. and Gilmer (2009).

[6] See Gorjidooz and Vasigh (2009).

[7] See Canas and Gilmer (2009).

[8] See Gorjidooz and Vasigh (2009).

will not be able to avoid its fragility as long as it heavily depends on the US economy, and needs to diversify its exporting markets to increase the partners of free trade agreements.

B) Fierce Global Competition and Industrial Evolution

The Maquila industry has also faced fierce global competition, in particular, from China, Central America and the Caribbean in terms of labor costs and the other costs [9]. The real appreciation of the peso in the 2000s has strengthened such pressure. The impetus was given by the fact that China joined the World Trade Organization in 2001, and that the US granted NAFTA-party access to Caribbean Basin Initiative countries in 2000. As a matter of fact, among the suppliers of imports to the US, Mexico's ranking had exceeded China's one until 2002, but after 2003 its ranking has reversed. When we look at the sector-wise shares, however, there has been no shift in the machinery sector, whereas the China's share of textiles and apparel products has become dominant in the US imports.[10] On this point, Watkins (2002) argued that Mexico can compete with China in the US market in high to medium value-added sectors, where there is a high ratio of weight to value (major appliances), where competition is based more on quality than price (medical goods), where there are frequent design changes, and where it is vital to protect intellectual rights; and that China has gained in low-value-added, commoditized sectors, such as apparel, luggage, and footwear. There is a further view on the evolutional changes of the Maquila manufacturing operation under the global competition. Carrillo and Lara (2005) described the industrial evolution by classifying Maquiladoras into four stages based on the nature of their manufacturing operation: the assembly stage (assembly in Mexico); the manufacturing stage (made in Mexico); the design stage (created in Mexico); and the stage of coordination of multiple activities based on information technology (coordination from Mexico). The actual trends in the value-added and productivity in the Maquila manufacturing in the 2000s appeared to reflect its industrial evolutions. Canas and Gilmer (2007) indicated that the Maquila production, measured by real value-added, has surged to new highs in the late 2000s, whereas job growth has remained weak and below the prior peak; and that the outcome has been rapid gains in productivity measured by output per worker.

In accordance with the industry evolved, the Maquiladoras have changed their geographical locations. Auto suppliers pursued the best access to the US heartland and often chose cities on the Texas border, and consumer electronics firms needed access to Asian suppliers, making California cities a logical choice. The apparel sector opted for the lower wages of central Mexico.[11]

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[9] Mexico's Economic Ministry, for example, estimates that the country pays average wages and benefits of $2.96 an hour, a rate highly advantageous when compared with California's $16.60 an hour but highly unfavorable when compared with China's 72 cents an hour. Ibid. also indicates that the manufacturing wages in Mexico have almost been 67 percent higher than in the Dominican Republic and approximately 92 percent higher than in Honduras in recent years.

[10] The data comes from US Department of Commerce, Census Bureau, Foreign Trade Division.

[11] See Canas and Gilmer(2009).

C) Inconsistency of the Maquila Framework

There have been two main issues on inconsistency of the Maquila framework. The 1998 tax-law changes as "permanent establishment (PE)" in Mexico, and NAFTA Article 303, threw the Maquila industry into confusion with regard to both income and custom taxation.

The Maquila plants had enjoyed until 1998 a virtual freedom from taxation. In 1998, however, the PE clause added to the Mexican tax code and took effect in 2000. This meant to repeal the transitory status of Maquiladoras and to require them to pay Mexican income taxes in the same way as the domestic companies. The PE clause had also been subject to double taxation of Maquiladoras' incomes without the US-Mexico agreement.[12] The inclusion of the PE clause created uncertainty that caused some firms to withdraw from Mexico, to downsize their operations, or to be discouraged from new foreign direct investment in Mexico. Under the frequent changes to the fiscal regime, the long-term financial planning would have been impossible for Maquiladoras due to their tax burden and administrative costs. Regarding NAFTA Article 303, it had forced the Maquila model to be changed fundamentally. The Article 303 eliminated duty drawback (or refunds of duties) for inputs from non-NAFTA origin as of January 1, 2001, if the final products incorporating these inputs were to be subsequently exported to another NAFTA country. The Maquila industry anticipated a large negative effect on operations, since the Maquiladoras of Japanese and other Asian companies were heavily dependent upon certain inputs from the Far East, and they would become subject to tariffs. In response to the industry's appeals, in December 2000, the Mexican government passed a decree creating 20 Sectoral Promotion Programs (PROSECs) to protect the tariff-free entry of non-NAFTA components not readily available on the domestic market. Though it allows companies to apply for reduced tariffs of 0 to 5 percent, the companies that apply for PROSECs must undertake extensive paperwork to track the origin of thousands of parts used in the production process.[13]

2.4. Lessons

Based on the aforementioned Maquila content, historical performances, recent challenges, we herein extract some lessons to be learned for border area development. The Maquila can basically be said to be a successful precedent in the sense that it has contributed a lot to the development of Mexican economy as well as of the US border cities from its spillover effects. The challenges the Maquila has faced, however, tell us the following lessons for its further improvements.

First, the program for the "in-bond processing" should be carefully designed in relation to other frameworks like free trade agreements and to its historical trends. The facts pointed out that the NAFTA agreement phased out some of Maquila benefits and the change in tax system gave a disincentive for further investment of the Maquila industry. Several privileges for the "in-bond

[12] To temporarily resolve this problem, in 1999 Mexican and the US tax authorities created exceptions to the PE clause with two provisions referred to as "safe harbor" and advance pricing agreements (APAs), but it had not been working well. See Canas and Coronado (2002).

[13] Since November 2006, the new Program so-called " IMMEX" to expand the Maquiladora program with a broader scope has been adopted. This paper does not go into its details, which is described in http://www.pwc.com/mx/doing-business-maquiladora.

processing", once established, should be secured independently from other frameworks and in a way of time-consistency. Second, industrial evolution should be continuously promoted under fierce global competition. The Maquila industry has experienced its generation alternation, and has still kept the improvements in its value-added and productivity with geographical expansion. As prerequisites for industrial evolution, Gorjidooz and Vasigh (2009) suggested "improvement of labor skills" and "modernization of infrastructure". The success of Maquiladora to develop more technology-intensive operations requires a large number of highly educated workers, while there is a low level of educational attainment in the economically active population along the border areas. The improvement of Mexico's infrastructure is also critical with a typical example of road network along with the geographical expansion of the Maquila industry towards inland areas. Although Mexico's border areas can share the US adequate road networks, about 32 percent of the Mexican federal highways are still in poor condition. Third, the markets for importing materials and parts and for exporting the processed products should be diversified. The Maquila serious downturns in the early 2000s mainly came from the 2001 US recession, and it lost a lot of jobs in the Maquila industry. As long as the Maquila industry depends much on the US markets, it continues to be vulnerable to the US business cycle. Since the main purpose of border area development lies in the sustainable job creation, the markets should be diversified to avoid the fluctuations by depending on single market.

3. THAI-MYANMAR BORDER DEVELOPMENT AND POLICY IMPLICATIONS

This section first emphasizes on the significance of the border area development between Thailand and Myanmar and its need for the Maquila-wise in-bond processing system, and then presents the policy implications obtained from the "Maquila" lessons.

3.1. Thai-Myanmar Border Development and Maquila-Wise System

The border area development is a crucial strategy in the Mekong region since the border areas are the gateway for international production networks to extend across the national borders in the region. The essence of international production networks lies in the "fragmentation", in which a manufacturing company or a group of the companies tend to fragment their production process into a number of blocks in different geographic regions, even to a variety of countries. Jones and Kierzkowski (1990) the founders of the "fragmentation" theory, argued that a company's decision on whether to fragment or not depends on the differences in location advantages (including the differences in factor prices like wages) and the levels of the "service-link costs", which are costs to link remotely-located production blocks. The large differences in location advantages and the lower the service-link costs encourage a firm to facilitate the fragmentation.

3.1.1. Production Networks in the Mekong Region

The Mekong region appears to have the greatest potential of the evolution of international production networks through the fragmentation.[14] There are still large differences in location advantage in the region, as we can see typically in the big gap in GDP per capita between Thailand with about 5,000 US dollars and the other Mekong economies with around 1,000 US dollars.[15] The service-link costs have been and will be steadily reduced since the regional frameworks such as the Greater Mekong Sub-region (GMS) and Mekong-Japan have been facilitating the programs to enhance the regional connectivity, although the Mekong countries except Thailand and Vietnam still show the worse performances in their logistics.[16] For manufacturing industries located in Thailand, thus, they are or will be outsourcing their labor-intensive inputs by relocating their labor-intensive production blocks to the less-developed, neighboring countries with lower wages.

3.1.2. Border Areas: Gateway for Production Networks

In this context, the national borders are attractive areas since they provide their own advantages: complementary factor endowment and cross-border infrastructure services.[17] To be specific, an industry located in border areas can enjoy the close availability of lower-cost labor forces from the less-developed country and other inputs (intermediate products, capital and technology) from the more-developed country. At the same time, an industry can avoid high service-link costs and unstable utility services that accrue from underdeveloped infrastructure in the less-developed country by utilizing cross-border infrastructure services provided from the more-developed country. That is why the border areas can be the gateway for production networks to extend across the national borders, in particular, when the borders exist between the less-developed and more-developed countries.

In fact, when we focus on the border areas between Thailand and neighboring countries, we can find the operating Special Economic Zones (SEZs) in the border areas with Cambodia (Koh Kong and Poipet) and Lao PDR (Savannakhet). Thai companies sometimes jointly invested by Japanese companies have their branch factories in these SEZs. On the other hand, the border areas with Myanmar have no operating industrial zones at present, and thus the areas would be the frontier to be developed as the gateway for Thai production networks to extend Myanmar side (See Figure 3). Therefore, this paper discusses Thai-Myanmar border development.

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[14] See Taguchi *et al* (2013). The development of international production networks in East Asia since the 1990s was described by Kimura (2006).

[15] According to the World Economic Outlook Database of International Monetary Fund (April 2013), the GDP per capita in 2011 of Thailand, Cambodia, Lao PDR, Myanmar and Vietnam are 5,395 US dollars, 853 US dollars, 1,320 US dollars, 824 US dollars, and 1,374 US dollars, respectively.

[16] According to the global ranking in “Logistic Performance Index 2012” by the World Bank, the rankings of Cambodia, Lao PDR and Myanmar are 101, 109 and 129 among 155 countries, while those of Thailand and Vietnam are 38 and 53.

[17] See Kudo (2009).

3.1.3. Thai-Myanmar Border Development

There are four border areas with main formal checkpoints at Thai-Myanmar borders (Thai border – Myanmar border): Mae Sai – Tachilek, Mae Sot – Myawaddy, Phu Nam Ron – Hit Hkee, and Ranong – Kawthaung. It is, however, only in Mae Sot where manufacturing production sites are agglomerating in Thailand side. Mae Sot has a large industrial agglomeration that is composed of labor-intensive manufacturing such as garment, textile, and food-processing. About 400 factories are located and around 20,000 migrants with legal qualification are working in Mae Sot. They had so far enjoyed a location advantage, i.e. relatively lower wages of migrant workers. The minimum-wage has, however, been raised to 300 baht since January in 2013. Then, most of factories have lost an advantage of lower wages since the minimum-wage has also been adapted to migrant workers, and thus they are facing the serious and urgent needs to save labor costs and to step up to high-value-added operations.[18] On the other side, Myanmar has a strong policy demand to create job opportunities at the border area, Myawaddy, by inviting any production sites from Thailand, under its economic reformation to pursue “balanced, proportionate and inclusive growth”.

3.1.4. Need for the Maquila-Wise System

Thus, it is at the border of Mae Sot – Myawaddy where the “fragmentation” is needed. Specifically, the labor-intensive production blocks at Mae Sot are expected to be relocated to Myawaddy where lower-wage workers are instantly available.[19] For Myawaddy side, the acceptance of production bases as the fragments of production networks may contribute to its border area development, especially job creations in the areas, whereas for Mae Sot side the outsourcing of the labor-intensive production may save labor costs and make it easier for the border industries to concentrate on the higher value-added operations. In this sense, the “fragmentation” would be a win-win strategy for both sides.

The core vehicle for facilitating the fragmentation at the border can be nothing but the “in-bond processing” system just like the” Maquila” program. The system basically allows Thai manufacturing companies at Mae Sot to set up their branch factories at Myawaddy side, and to leave labor-intensive processes such as cutting, making, and packing to their branch factories on commission. The necessary machinery, equipment, parts and materials can be imported to Myawaddy without any import-customs duties, and the products processed and assembled at Myawaddy can be re-exported to Thailand or exported to other countries with preferential customs duties under such frameworks as free trade agreements (FTAs) and Generalized System of

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[18] According to the interviews at Mae Sot on Oct.29 - Nov.1, 2012 under the JICA research project “Job Creation by Border Area Development between Thailand and Myanmar”, some of the factories have the plan to relocate factories to Cambodia or to central areas of Thailand with innovative facilities to save their labor-costs.

[19] According to “The 23th Comparative Survey of Investment-Related Costs in 31 Major Cities and Regions in Asia and Oceania May 2013” by JETRO, the monthly average wage of factory workers is 345 US dollars at Bangkok, whereas it is 53 at Yangon, one-sixth of that at Bangkok.

Preferences (GSPs).[20] The adaptation of the Maquila-wise system might contribute to the development of manufacturing-related industries at Mae Sot as well as that at Myawaddy, as if the Maquila program has contributed a lot to the development of the US border cities from its spillover effects as well as of Mexican economy.

3.2. Policy Implications from the Maquila Lessons

We herein finally present the policy implications for Thai-Myanmar border development, obtained from the "Maquila" lessons shown in Section 2.4. We focus issues on the careful designing of in-bond processing system, infrastructure of outer-link connectivity and labor skill development for border area development. Among the lessons presented in Section 2.4, the diversification of the exporting market seems to be not the case of Thai-Myanmar border development, since both countries have depended not so much on their markets each other.[21]

3.2.1. Careful Designing of In-Bond Processing System

The Maquila lessons told us that the benefits of the in-bond processing system should be secured independently from other frameworks and in a way of time-consistency. In case of the Mekong region, the framework of Special Economic Zone (SEZ) usually has the in-bond processing function and it can be an alternative to the Maquila program.[22] In the Thai-Myanmar border, the same kind of SEZ with the in-bond processing system should be adopted in the border of Myanmar side, Myawaddy.[23] The crucial issue is the relationship between the SEZ framework and the related free trade agreements (FTAs) such as ASEAN Free Trade Area (AFTA) and ASEAN plus One. If the FTA framework overrode the in-bond processing system in the SEZs as if the NAFTA did the Maquila program, the in-bond processing benefits would be phased out in the following ways. First, the duty-free imports of the necessary inputs for processing in Myanmar would be confined to the countries within the FTA frameworks, and not allowed to its outside countries. Second, even though the duty-free imports were allowed within the FTA-related countries, the "Certificate of Origin" in exporters, which would impose logistical burdens on exporting companies, would be required, whereas the in-bond processing system does not require any certificates. The in-bond processing privilege under the SEZ framework should, therefore, be secured independently from any FTAs. Regarding the exports of the products processed in

[20] The changes in GSPs of EU may also encourage the fragmentation from Thailand to Myanmar. Thailand will graduate from GSP of EU in January 2015, and Myanmar will be applied by GSP for LDC (least developed countries) from July 2013.

[21] According to "Key Indicators for Asia and the Pacific 2012" by Asian Development Bank, as Myanmar's exporting shares, Thailand and China occupies about 40 and 20 percent respectively.

[22] For instance, the SEZ with in-bond processing function is established in Cambodia (see "Sub-Decree No. 148 on the Establishment and Management of the Special Economic Zone" dated December 29, 2005), and in Lao PDR (see "Decree of the Prime Minister on the Management Regulations and Incentive Policies regarding the Savan-Seno Special Economic Zone, Ref. No. 177/PM" dated November 13, 2003).

[23] As of today (July 21, 2013), the draft of the SEZ law, which is supposed to have the in-bond processing framework in Myanmar is under discussion in its Parliament.

Myanmar, the FTAs and GSPs could be applied as if the products in Maquiladoras were treated preferably under US-GSP.

The Maquila program includes not only the special customs treatment but also such incentives as foreign investment participation by 100 percent and transferability of any personnel (see Figure 1 again). The SEZ in Myawaddy should have similar incentive-frameworks, in particular, the transferability of the personnel from Thailand to Myanmar. It should allow Thai managers and technicians to enter the factories in Myawaddy industrial zone with non-immigrant visas, and also should permit Myanmar migrant workers in Thailand to come back to the Myanmar site without strict procedures. It would contribute to job creation in Myanmar side and also to skill development in Myanmar workers through the on-the-job training from migrant-experienced workers to newly-entered workers in manufacturing sectors. In addition, the Mae Sot – Myawaddy cross-border zones of trade and industrial estates should have such usual institutional arrangements as single-stop and single-window services for export and import,[24] and one-stop business services including offshore banking and logistics.

3.2.2. Infrastructure: Outer-Link Connectivity

Just as the Maquila case suggested the need for the modernization of infrastructure in accordance with its geographical expansion, the border areas would not be developed if the areas were isolated and were not linked with domestic and foreign markets. The Mae Sot – Myawaddy border will also need the infrastructure to secure the outer-link connectivity towards such big cities as Bangkok and Yangon, and the largest shortcomings is a road network in Myanmar side.

According to the truck-running test from Ayutthaya at the northern part of Thailand to Yangon conducted by JETRO in 2012 (see Table 1), it took 68 hours, around 3 days, which are far faster than the necessary days, 21 days, for the sea transportation between Bangkok and Yangon. It should be noted, however, that among the total 68 hours, the waiting time of 35 hours is exceeding the truck running time of hours. The waiting time is composed of the one for the border gate to be opened, and the one for the traffic control to be lifted. While the opening time at the border gate is from 6:00am to 18:00pm, the truck arrived at the border gate at 18:50pm, and thus had to wait at the gate until 6:00am on next day. At the same time, since the road from Myawaddy to Kawkareik, an inland city of Myanmar is quite narrow and hilly, the traffic is controlled to one-way with the direction change on every alternative day, and thus the truck had to wait until another day to be allowed for running. On this road section, the truck could run at the slowest speed, 18 km/hour. This survey implied that the lead time from Ayutthaya to Yangon could be saved by half if the road condition in Myanmar side were improved and the border gate were open for 24 hours.[25]

The outer-link connectivity is not confined to creating road networks, and may be related to a matter of community development in each region. Each region has a potential to create its own products by using regional resources and to be a site to attract tourists. In fact, Thailand's regions have experienced the community development in terms of the "one village one product" as called

[24] The issue on the single-stop and single-window was described in Ishida (2010).

[25] Thai government has provided the grant for constructing an alternative road from Myawaddy to Kawkareik by April 2015.

"OTOP", and thus can disseminate their experiences to Myanmar side. The connectivity should not be a mere transporting method, but should be a catalyst for the community development.[26]

3.2.3. Labor Skill Development

The Thai-Myanmar border development will need a lot of manufacturing workers in Myanmar side and high-skilled human resources in Thailand side. It is the same situation as in the Maquila industry that has needed the improvement of labor skill as a prerequisite of its industrial evolution.

In Myanmar side, in case that the industrial estate is developed and fully invested by manufacturing companies in Myawaddy, it will require a lot of manufacturing workers, by more than a hundred thousands of workers. These worker's demands can be matched by the new entry of domestic workers in Myanmar and also the return of migrant workers from Thailand. In Thailand side, in accordance with industrial reformation from labor-intensive operations toward higher-value-added ones, the new demands for the skilled managers, technicians and other specialists may arise.

The TVET (Technical and Vocational Education and Training) should, therefore, be reinforced for labor skill developments targeting the human resources at the border area in both Mae Sot and Myawaddy sides. The TVET sites should be located at the moment in Mae Sot side, since the manufacturing production bases have existed in Thailand side and it has enabled the TVET to include the on-the-job-training in the factories as well as the off-the-job-training in the classroom. A research project conducted by Japan International Cooperation Agency is now considering a TVET comprehensive strategy at Mae Sot. The strategy is composed of three programs: 1) the program targeting Thai personnel for providing such skills as management, accounting, etc. for supply-chain management and as fashion, design, quality control, etc. for high value-added operations; 2) the program targeting Myanmar workers including migrants for providing basic and technical skills for factory-working; and 3) the program for community development including the dissemination of Thai OTOP experiences. To materialize these strategies, the inter-governmental group in Thailand has been set up under this project. This project also pursues the collaboration between Thai-Myanmar TVET institutes in terms of the exchanges of their trainers and trainees and the creation of common training curriculum.

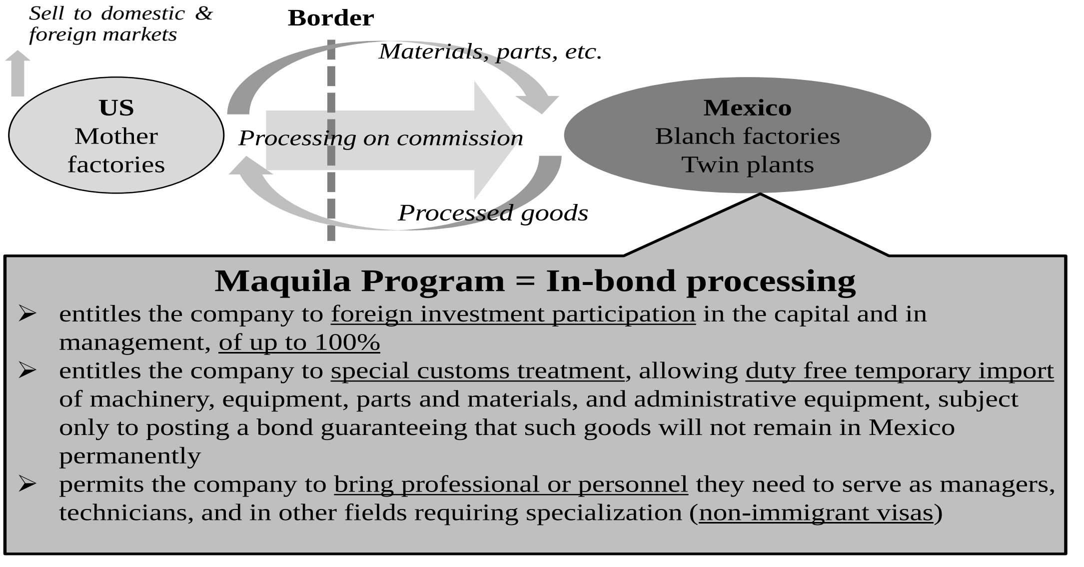
4. CONCLUDING REMARKS

This paper set out to extract the lessons from the "Maquila" history of the US-Mexico border development and to present their policy implications to the upcoming Thai-Myanmar border development. The "Maquila" system, the Mexican "in-bond processing" program, is said to be the most successful case as border area development in the world, since it has contributed a lot to the development of Mexican economy as well as of the US border cities from its spillover effects, though it has faced several challenges under fierce global competition. The Maquila-wise system is definitely required in Thai-Myanmar border development both for the job creations in Myanmar side and for the industrial reformation in Thailand side. Careful designing of in-bond processing

[26] The road networks between the US and Mexico do not appear to have a "corridor" concept with community development.

system, enhancing outer-link connectivity from borders to central cities, and labor skill development are the policy implications obtained from the Maquila lessons.

Figure-1. Framework of Maquila Program

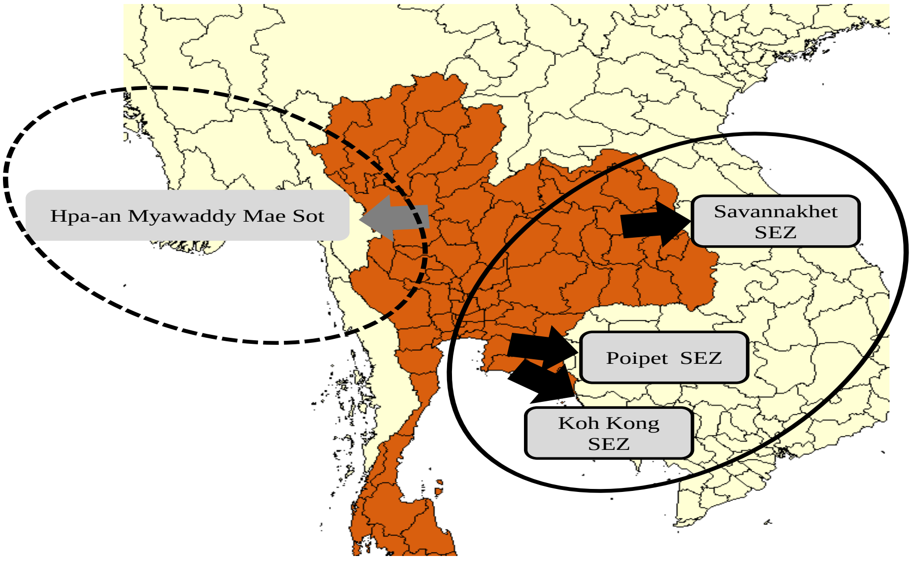


Source: the Authors

Figure-2. Industrial Parks at the US-Mexico borders

Source: Gorjidooz and Vasigh (2009)

Figure-3. Production Networks Emerge from Border Areas



Source: the Authors

Table-1. Truck-running Test from Ayutthaya to Yangon

Total time needed (hours: minutes) for 870 km	**68:25**
Truck running time	26:36
Ayutthaya - Mae Sot border (km/hour) for 445 km	10:28 (57.1)
Myawaddy border - Yangon (km/hour) for 425 km	16:08 (40.5)
(Myawaddy - Kawkareik for 54 km)	02:57 (18.2)
Waiting time	35:45
Waiting for border-gate to be opened	14:45
Waiting for traffic control to be lifted	21:00
Costum procedures	05:54
Export at Mae Sot	00:30
Import as Myawaddy	05:24
Transshipment	00:10
Reference: Sea transportation between BKK and Yangon	21 days

Source: (JETRO, 2013)

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