CHAPTER 9

Economic Impacts of the Economic Corridor Development in Mekong Region

Ikumo Isono

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CHAPTER 9

ECONOMIC IMPACTS OF THE ECONOMIC CORRIDOR DEVELOPMENT IN MEKONG REGION[1]

Ikumo Isono

INTRODUCTION

Countries in the Mekong region have been developing steadily since 1997. They were affected by the global financial crisis but they recovered soon. However, the gaps in per capita gross domestic product (GDP) in absolute value within each country remain unresolved. The regions in Mekong where multinational manufacturing firms have made investments got relatively high per capita GDP, while many others have lower incomes despite their vast natural resources.

The Mekong region still needs hard and soft infrastructure for the following reasons. First, the positive economic impact of tariff reduction is limited in geographical terms. With the ASEAN Free Trade Area (AFTA) almost completed, six forerunner and four newcomer countries have reduced tariffs to zero for most goods.

The ASEAN promotes several institutional economic integration measures toward the establishment of the ASEAN Economic Community (AEC) in 2015. However, the gaps still remain. Hiratsuka et al. (2009) revealed that free trade agreements (FTAs) were neither well disseminated nor well utilized by Japanese multinational firms due to

[1] All simulation results of GSM in this chapter are provided by the IDE-JETRO GSM team.

what they found to be cumbersome procedures. He also said that FTAs are beneficial to larger firms and larger countries, believing trading large volumes will pay the costs of preparing the certificate of origin. He suggested that implementing FTAs were insufficient to narrow the economic gaps between forerunner countries and newcomer countries. More measures are needed to achieve "ASEAN Connectivity" or intra-regional connectivity in the Southeast Asian region.

Second, the financial crisis in 2008 made Mekong countries aware of the serious risk of excessive dependency on the demand of the United States and European countries. Asian countries have produced a lot of goods as the "factory of the world" and exported to the United States, European Union and other countries while the demand for goods from Asia was relatively small. Mekong countries have to discuss how they can increase the Asian demand and income.

Third, investing firms said they still desperately need hard and soft infrastructure. A 2009 survey by the Japan's External Trade Organization (JETRO) in Mekong region in revealed that many Japanese and non-Japanese investing companies identified the need to develop deep sea ports, industrial roads, railways, logistics parks, R&D facilities, electricity and communication infrastructure and other facilities in urban areas. They also indicated their need for more efficient customs facilitation and further implementation of the Cross-Border Transport Agreement, which as the Asian Development Bank (ADB) defines it, is a multilateral instrument for the facilitation of cross-border transport of goods and people.

The development of hard and soft infrastructure is considered vital to narrowing the gaps in economic development. In 1998, the ADB introduced the concept of "economic corridor," which aims to promote regional cooperation. Most trunk roads in Laos and

Cambodia have already been paved. Infrastructure development and the evolution of production networks supported rapidly increasing freight transport.

The ASEAN Economic Community Blueprint emphasizes the importance of deregulation in logistics services for promoting intermodal transports. The Economic Research Institute for ASEAN and East Asia (ERIA) has been supporting the wider regional, cross-border economic corridor development initiatives. It selected "Mekong-India Industrial Corridor" as the first such initiative. The corridor includes whole section of what ADB calls "Southern Economic Corridor" and connects Bangkok and Chennai via Dawei port in southeastern Myanmar.

Meanwhile, there still remain several bottlenecks. For instance, there is yet no bridge at Neak Loueng crossing the Mekong River. Many trunk roads in Myanmar have not been improved. There are also concerns in Cambodia and Laos that the development of economic corridors are beneficial only to economically large countries such as Thailand and China and not to small countries. Worse still, they could even hurt these countries' industries.

The Geographical Simulation Model (GSM) developed by IDE-GSM team will estimate the economic impacts of several infrastructure development projects such as the East-West Economic Corridor and Southern Economic Corridor. Although there exist problems in standardized economic data in East Asia and GSM itself leaves much room for improvement, GSM provides information about which infrastructure development has a great impact and which has not. GSM also shows how these development projects influence the small countries and what measures have to be adopted to address specific issues.

Based on a comparison of the baseline scenario with two development scenarios,

the former depicts the economic status in 2020, where there are no new infrastructure projects until 2020. The development scenarios mean those representing the economic status in 2020, where there are specific infrastructure projects in 2010.

First, we determine the economic impact of the development of the Mekong-India Economic Corridor (MIEC), using the baseline, on Cambodian provinces. MIEC runs through Ba Ria-Vung Tau and Ho Chi Minh in Vietnam, the Moc Bai–Bavet border, Phnom Penh in Cambodia, the Poipet–Aranyaprathet border, Bangkok in Thailand, Kanchanaburi, Dawei in Myanmar and Chennai in India.

Second, we assess the economic impact of the development of the East-West Economic Corridor (EWEC). The EWEC runs through Da Nang in Vietnam, Lao Bao–Dansavan border, Savannakhet in Laos, the Second International Mekong Bridge crossing the Savannakhet–Mukdahan border, Khon Kaen province in Thailand, Mae Sot–Myawadi border, and Mawamyine in Myanmar. We discuss how the development of EWEC affects the provinces in Laos.

Our findings are as follows. First, customs facilitation benefits the border cities along the corridor while the other border cities will see decrease in populations compared with the baseline scenario. Corridors may change the advantages of border cities. Second, the central cities of the clusters such as Ho Chi Minh City, Phnom Penh and Bangkok along MIEC will see either a decrease or slight increase in population with the development of MIEC. The MIEC is expected to increase the populations of surrounding regions like Binh Duong and Dong Nai provinces near Ho Chi Minh, Kandal and Kampong Chhnang provinces near Phnom Penh, and Samut Prakarn near Bangkok. These findings suggest that MIEC running through Ho Chi Minh City, Phnom Penh and Bangkok will reduce the excessive agglomeration forces in these

large cities by connecting these cities and rural areas.

1. GEOGRAPHICAL SIMULATION MODEL

The basic structure of GSM is illustrated in Kumagai et al. (2008, 2009). GSM is a simulation model based on spatial economics. It simulates the dynamics of population and industries in East Asia over the long term. It is designed to analyze the effects of infrastructure projects at the prefecture level. As of January 31, 2010, GSM covers 10 ASEAN countries, Bangladesh and parts of China and India[2].

We collected sub-national data for 956 regions from various sources and adjusted GDP data consistent with the national GDP (at current USD rates) in 2005. Table 1 shows the summary statistics. Base years of original sub-national data are as follows; China (2004), Hong Kong (2003), Macau (2004), Thailand (2003), Philippines (2003), Cambodia (2004), Lao PDR (2004 or 2005), Vietnam (2000), Bangladesh (2000), Singapore (2000), Malaysia (2000), Indonesia (2000-2003), India (2000), and Myanmar (1997)[3].

The spatial economics, also known as the new economic geography, sets the objective functions and behaviors of people and industries and see how people and economic activities agglomerate or disperse in the whole economy. Several literature tell the characteristics of spatial economics.

- Transport cost is one of the most crucial factors. Used here in a broad sense, transport costs cover not only loading, carrying, collecting, storing,

[2] See the notes under Table 1.
[3] In this regard, there exists a problem of standardized economic data in East Asia.

Table 1: Regions in the model (as of January 31, 2009)

	Regions	Population		
		Average	Max	Minimum
Bangladesh	64	2,168,750	9,539,920	334,152
Brunei Darussalam	1	373,819	373,819	373,819
Cambodia	23	600,000	1,934,343	29,684
China	52	3,479,629	9,216,670	370,615
Hong Kong	1	6,837,800	6,837,800	6,837,800
India	174	1,715,723	10,220,030	35,477
Indonesia	440	471,014	4,263,934	259
Laos	17	330,647	846,757	87,141
Macao	1	473,090	473,090	473,090
Malaysia	14	1,866,286	4,688,555	229,655
Myanmar	14	3,930,155	7,610,905	298,643
Philippines	17	5,015,294	11,073,832	1,522,087
Singapore	1	3,543,900	3,543,900	3,543,900
Thailand	76	856,711	6,789,758	172,919
Vietnam	61	1,362,393	5,481,434	299,619
Total	**956**			

Notes: [1] Yunnan and Guangdong provinces, Guangxi Zhuang Autonomous Region, Hong Kong and Macao.
[2] Andhra Pradesh, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Sikkim, Tamil Nadu, Tripura and West Bengal states.
Source: IDE-JETRO GSM team

transshipping, unloading, sorting, distributing and delivering but also the costs of the movement of people and information, tariffs and non-tariff barriers, language and cultural differences and all other costs related to selling to different places.

- In a standard model of a two-region setting, people and industries will disperse evenly to the two regions when the transport costs are enough high because

firms want to sell mainly to the region where they locate. On the other hand, people and industries will agglomerate to one region when the transport costs are relatively low because firms can send goods at cheaper costs to the other region. The benefits of locating in one region will also outweigh those of locating in two regions.

The model is well known as the "Core-Periphery Model" (Krugman 1991 and Fujita, Krugman and Venables 1999). It provides a background of the phenomena indicating that the enhancement of highway networks, rapid railway systems and information network systems often lead to a higher concentration of people in large cities.

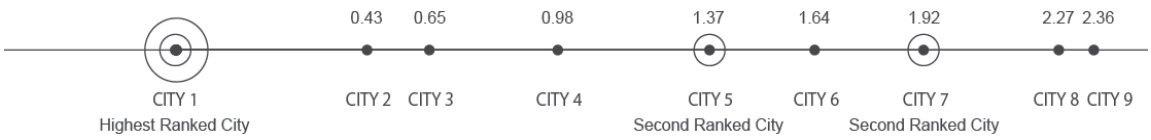
- Whether its advantageous for regions to form a cluster or not can be explained mainly in terms of two factors. One is the home market effect that a large market will attract investing firms. In several standard models, the share of large regions in an industry will be more than its share in population size. The other factor is accessibility to other regions. When we handle a model with three or more regions, the advantage or disadvantage of a region in accessibility also determines the share of locating firms[4] (Behrens et al. 2004 and 2009).
- Being the transportation hub may sometimes benefit a region because of good accessibility. In some cases, such hub can pose to a region due to severe price competition (Krugman 1993 and Ago et al. 2006).
- Investing firms locating near a big city have the advantage of purchasing a variety of goods at cheaper costs**,** while such a move blocks the formation of

[4] In the core-periphery model, there is no difference in the advantage of accessibility if the transport costs between two regions are the same.

certain industries in surrounding smaller cities because the big cities are the ones absorbing the industries. Figure 1 shows a simulation result of a model of spatial economics generating a hierarchical urban system (Fujita et al. 1999). Commodity goods are produced and sold in CITIES 1 to 9. However, middle class-differentiated goods are sold only in CITY 1, 5 and 7 and most differentiated goods are sold only in CITY 1. Residents of CITY 2 can purchase the most differentiated goods at relatively cheaper costs but CITY 2 itself has difficulty inviting a variety of industries.

- Because we incorporate a standard model of spatial economics into the simulation model, we can see those characteristics in our simulation results. That is, the infrastructure projects will change the advantages of regions in accessibility and thus change the location patterns of industries.
- We compare the baseline scenario and scenarios with several infrastructure projects. The baseline scenario has no infrastructure projects in 2020. We set several macroeconomic and demographic parameters being held constant, and we only change logistic settings across scenarios. The following macro settings are then maintained across all scenarios:

Figure 1: Hierarchical Urban System Generated by a Model of Spatial Economics



Source: Author depicted from Fujita, Krugman and Mori (1999).

- We assume a spontaneous population growth. Each country's population is assumed to increase at the rate forecast by the United Nations Population Fund until 2020.
- There is no immigration between the target area and the rest of the world.

We assumed the setting of baseline scenario as follows:

- Trucks can run the existing highway networks at 30km/h.
- We assume goods being shipped have to wait at border crossing point and ports and airports. Border costs, or times required for custom clearances for road transports, are as follows: Singapore–Malaysia is 2 hours, Malaysia–Thailand is 8 hours and all the other national borders are 24 hours.
- The speed of all sea routes is 15km/h. Handling times for sea transports are 8 hours for domestic and 24 hours for international transportation.

In the model, we prohibit international migration of labor and only allow domestic migration. Because natural increase in populations is not affected by the development of infrastructure, national populations across the scenarios must be the same. In this regard, if a region's population increases as a result of the development of a corridor more than the baseline scenario, at least one region in the same country must see a decrease in population.

2. IMPACT OF THE MEKONG-INDIA ECONOMIC CORRIDOR

In this section we consider the economic impact of the development of the MIEC

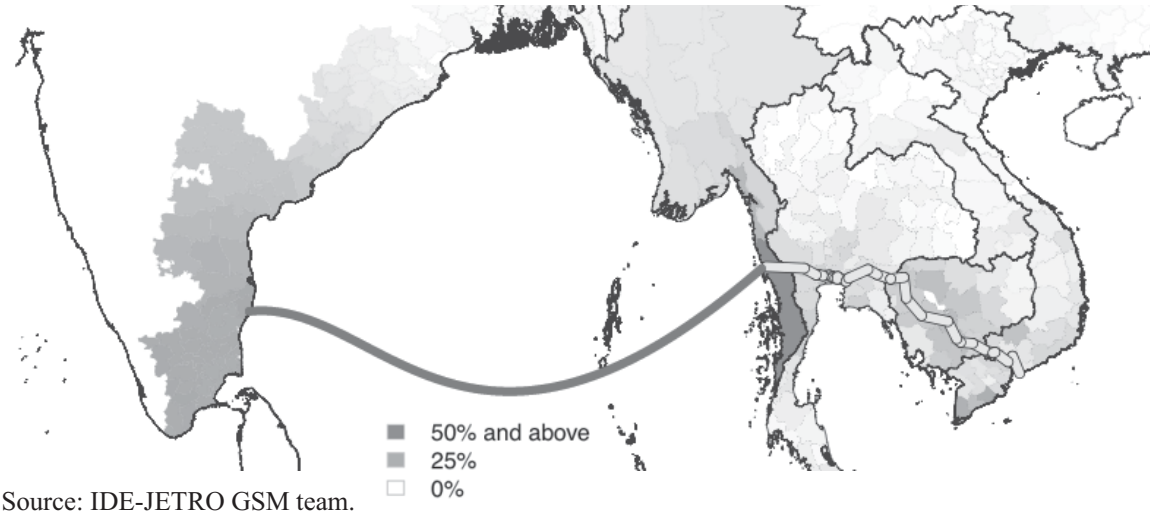
compared with the baseline scenario. MIEC straddles Ba Ria-Vung Tau and Ho Chi Minh in Vietnam, the Moc Bai–Bavet border, Phnom Penh in Cambodia, the Poipet–Aranyaprathet border, Bangkok in Thailand, Kanchanaburi, Dawei in Myanmar and Chennai in India. We set the scenario as follows;

- Bridge at Neak Loueng is constructed. It will reduce the transit time for crossing the river.
- New highway between Kanchanaburi and Dawei is constructed.
- Dawei port is developed and a new sea route from Dawei to Chennai opens.
- Customs facilitations are implemented at the Moc Bai–Bavet border, the Poipet–Aranyaprathet border and the border between Kanchanaburi and Dawai.
- Handling time at Dawei port and Chennai port is shortened.

Figure 2 shows the economic impacts of the development of MIEC. The dark-shaded areas representing specific regions will have large gains in GDP vis-à-vis the baseline scenario. Although the size of the impacts differs by region, all regions along the corridor can expect considerable gains in regional GDP. Tanintharyi, where the capital region is Dawei, gains the most by 41.2% of GDP from the baseline scenario. This means Tanintharyi will benefit the most from the construction of a highway between Kanchanaburi and Dawei, a new sea route from Dawei to Chennai and the implementation of customs facilitation at the border between Kanchanaburi and Dawai. It is also notable that the gains are expected to spread to wider regions.

Let us focus the economic impacts of MIEC on regions in Cambodia. Table 2 shows the lists of top- and lower-ranked population-gaining provinces in Cambodia. Kampong Chhnang gains the most, followed by Siemreap. In the top-ranked list,

Figure 2: Gains in Regional GDP: the Mekong-India Economic Corridor vs Baseline in 2020



Source: IDE-JETRO GSM team.

Kampong Chhnang, Kandal, Pursat and Banteay Meanchey are along MIEC. We note that Kampong Chhnang, Kandal, Takeo and Pursat are near Phnom Penh, suggesting that MIEC will raise the populations of regions along the corridor and regions near the central city of cluster.

Meanwhile, some provinces experience a decline in population growth. Koh Kong and Pailin are border regions facing Thailand while Ratanak Kiri shares borders with Vietnam. Customs facilitation benefits border cities along the corridor while other border cities will see a decrease in populations compared with the baseline scenario. This result implies that border regions are competitive with each other.

Central cities comprising clusters such as Ho Chi Minh City, Phnom Penh and Bangkok have a tendency to decrease or slightly increase their populations by the development of MIEC, which in turn will increase the populations of surrounding

Table 2: Top Ranked and Lower Ranked Population Gaining Regions in Cambodia by the Mekong-India Economic Corridor

Top Ranked		Lower Ranked	
Kampong Chhnang	2.1%	**Sihanoukville**	-5.4%
Siemreap	1.4%	**Koh Kong**	-1.7%
Kandal	0.9%	**Ratanak Kiri**	-1.1%
Takeo	0.9%	**Kratie**	-1.0%
Pursat	0.8%	**Pailin**	-1.0%
Banteay Meanchey	0.6%	**Phnom Penh**	-0.9%

Note: Compared with the Baseline Scenario.
Source: IDE-JETRO GSM team.

regions. Phnom Penh is in the lower-ranked list in Table 2. The city's population declines by 0.9% compared with the baseline[5]. Bangkok's population decreases by 0.9% and Ho Chi Minh City increases by only 0.5%. Samut Prakarn, Chonburi and Rayong in Thailand, Binh Duong, Dong Nai and Ba ria-Vung Tau in Vietnam, which are near the large cities, will increase their populations by 2.1%, 0.5%, 3.5%, 1.3%, 1.4% and 2.5%, respectively. MIEC running through Ho Chi Minh City, Phnom Penh and Bangkok will reduce the excessive agglomeration forces of these cities by connecting these cities and rural areas. Regions within the clusters as well as border regions tend to compete with each other.

Table 3 lists the top- and lower-ranked GDP-gaining regions in Cambodia by MIEC. Surrounding regions of Phnom Penh such as Kampong Chhnang, Kandal,

[5] It does not mean Phnom Penh's population decreases from current population. Note that we compare the population under the baseline scenario in 2020 and the population in the development scenario in 2020.

Table 3: Top Ranked and Lower Ranked GDP Gaining Regions in Cambodia by the Mekong-India Economic Corridor

Top Ranked		Lower Ranked	
Kampong Chhnang	26.3%	**Ratanak Kiri**	4.6%
Siemreap	23.9%	**Pailin**	7.9%
Kandal	23.3%	**Sihanoukville**	8.1%
Pursat	22.9%	**Stung Treng**	8.5%
Takeo	22.7%	**Mondul Kiri**	9.5%
Kampong Speu	22.4%	**Koh Kong**	11.4%

Note: Compared with the Baseline Scenario.

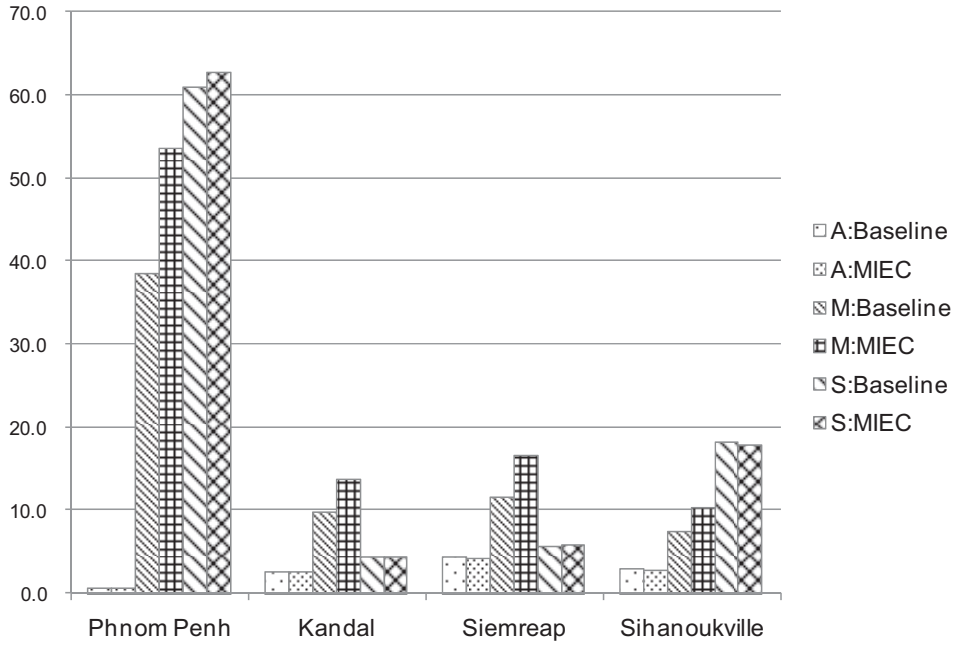
Source: IDE-JETRO GSM team

Takeo, Kampong Speu are in the top-ranked list. Unlike the previous list, both top– and lower-ranked regions will post GDP growth as the economic corridor develops. It is because increase in GDP per capita, thanks to improving accessibility, will offset population decrease.

Siemreap and Sihanoukville are second-ranked core cities of Cambodia. The former is in both top-ranked lists of population and GDP while Sihanoukville is in both lower-ranked lists. We can assume that the relative competitiveness of the two regions has changed because Siemreap is located close to the MIEC and Sihanoukville is situated outside the corridor. The difference in GDP growth is mainly attributed to the difference in the growth of manufacturing sector.

Figure 3 shows the gains in sectoral GDP of Phnom Penh, Kandal, Siemreap and Sihanoukville by MIEC. Siemreap's manufacturing GDP increases by 44.1% while Sihanoukville's is 37.6%.

Figure 3: Gains in Sectoral GDP: the Mekong-India Economic Corridor vs Baseline (Unit: Index (Phnom Penh's GDP in Baseline Scenario=100)**)**



Source: IDE-JETRO GSM team.

3. IMPACT OF THE EAST WEST ECONOMIC CORRIDOR AND THE THIRD INTERNATIONAL MEKONG BRIDGE

In this section we assess see the economic impact of the development of the East-West Economic Corridor (EWEC). EWEC runs through Da Nang in Vietnam, Lao Bao–Dansavanh border, Savannakhet in Laos, the Second International Mekong Bridge crossing the Savannakhet–Mukdahan border, Khon Kaen in Thailand, the Mae sot–Myawadi border, and Mawamyine in Myanmar. We set the scenario as follows:

- Highway from Myawadi to Mawamyine is improved.
- Customs facilitations are implemented at the Lao Bao–Dansavan and Mae

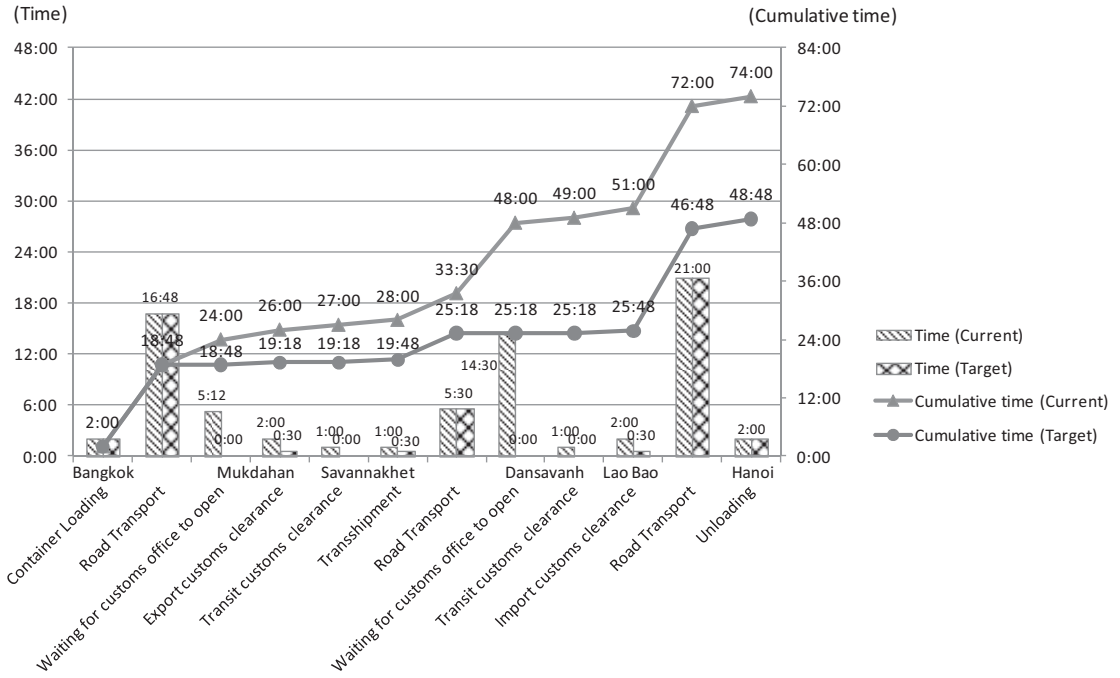
sot–Myawadi borders.

The simulation result highlights the importance of customs facilitation, as Kumagai et al. (2008, 2009) have noted. The scenario marked by customs procedure facilitation brings about much larger benefits than the one without customs facilitation. Customs facilitation plays a very important role in bringing the full potential of highways. The physical infrastructure improvement affects regions little. Previous GSM analyses revealed that physical infrastructure and customs facilitation yield more economic benefits than do the "highway only" and "customs only" scenarios. Thus both highway improvements and customs facilitation are important.

The simulation result also showed that the EWEC would stimulate not only the transaction volume along the corridor but also the trade between Bangkok and Hanoi. In fact, JETRO's survey in the Mekong region in 2009 found that electronics companies in Hanoi wanted to purchase parts and components from companies in Bangkok and Ayutthaya's electronics clusters. JETRO (2008) pointed out that there were potentials for logistics improvements between Bangkok and Hanoi through customs facilitation.

Figure 4 shows a potential logistics improvement along the EWEC. First, we assume the current situation based on an actual experiment indicating that the transport time from Bangkok to Hanoi is 74 hours. Transport time in this case covers not only the duration of road transport but also loading, unloading and transshipment time, length of customs clearance and waiting time for the customs office to open. If we adopt single-stop inspection at the two borders along the EWEC and reduce the waiting time at the customs and the time for transshipment, transport time can reasonably be reduced by 34% to 48.8 hours.

Figure 4: Potential Logistic Improvement along EWEC



Source: Author compiled from JETRO (2008).

In addition to the EWEC, the Third International Mekong Bridge is expected to develop between Nakon Phanom in Thailand and Thakhek in Laos. Thakhek is located about 130km north of Savannakhet. As in Table 4, when the development of the Third Bridge is completed, the road distance from Bangkok to Hanoi will be shortened substantially. It may encourage the firms to change the route from EWEC to the Third Bridge when they ship between Bangkok and Hanoi, and even increase the trade volume between the two cities.

Because the new bridge will modify the advantages of regions in terms of accessibility and thus the firms' choice of location strategies, we set another scenario, dubbed "EWEC+Third Bridge," as follows.

- All measures in EWEC are implemented.

Table 4: Road Transport Distance from Bangkok to Hanoi (km)

EWEC Route (as in Figure 4)		Third Bridge Route	
Bangkok to Mukdahan	725	Bangkok to Nakon Phanom	800
Savannakhet to Densavanh	244	Thakhek to Nam Phao	210
Lao Bao to Hanoi	714	Cau Treo to Hanoi	400
Total	1,683	**Total**	1,410

Source: Author complied from JETRO (2008) and Kawada (2009).

- The Third International Mekong Bridge is developed between Nakon Phanom and Thakhek.
- Customs facilitation is implemented at Nakon Phanom–Thakhek border.

The top- and lower-ranked population-gaining and GDP-gaining regions in Laos are summarized in Tables 5 and 6. The development of the Third Bridge scenario will benefit Khammouan, whose capital is Thakhek, more than the EWEC scenario. Regions along and south of EWEC such as Savannakhet, Champasak, Salavan, Attapu and Xekong will gain significant population and GDP growths through the EWEC. Such gains will be offset by the development of the Third Bridge. Many northern regions of Laos will gain or recover their GDP in the EWEC+Third Bridge scenario even if their populations will decline in the EWEC scenario.

Competition among border regions still exists. Population in the Lao capital Vientiane, which shares a border with Thailand, will decline by 2.3% in the EWEC scenario and by 1.9% in the EWEC+Third Bridge scenario. The GDP increase of Vientiane will be relatively small, that is, by 3.6% in the EWEC scenario and by 5.5% in the EWEC+Third Bridge scenario. Bokeo, which also shares a border with Thailand,

Table 5: Top Ranked and Lower Ranked Population Gaining Regions in Laos by the East West Economic Corridor and the East West Economic Corridor with the Third Mekong Bridge

Top Ranked			Lower Ranked		
	EWEC	EWEC+Third Bridge		EWEC	EWEC+Third Bridge
Savannakhet	3.8%	3.3%	**Oudomxai**	-2.8%	-2.9%
Champasak	2.7%	2.3%	**Vientiane capital**	-2.3%	-1.9%
Salavan	2.3%	1.9%	**Louangphabang**	-2.3%	-2.2%
Khammouan	2.2%	2.5%	**Xiangkhouang**	-2.1%	-2.0%
Attapu	1.4%	1.1%	**Xaignabouli**	-2.0%	-2.1%
Xekong	1.2%	1.1%	**Bokeo**	-1.9%	-2.1%

Note: Compared with the Baseline Scenario.

Source: IDE-JETRO GSM team.

Table 6: Top Ranked and Lower Ranked GDP Gaining Regions in Laos by the East West Economic Corridor and the East West Economic Corridor with the Third Mekong Bridge

Top Ranked			Lower Ranked		
	EWEC	EWEC+Third Bridge		EWEC	EWEC+Third Bridge
Savannakhet	19.4%	18.9%	**Bokeo**	-1.0%	-1.2%
Xekong	16.9%	16.8%	**Xaignabouli**	-0.8%	0.0%
Champasak	15.8%	15.3%	**Oudomxai**	-0.6%	0.2%
Khammouan	15.4%	17.4%	**Louang-Namtha**	-0.1%	0.0%
Salavan	14.6%	14.3%	**Louangphabang**	0.5%	1.8%
Attapu	13.9%	13.6%	**Xiangkhouang**	0.8%	2.1%

Note: Compared with the Baseline Scenario.

Source: IDE-JETRO GSM team.

is affected more severely than Vientiane. The development of the Third Bridge will **exacerbate** Bokeo's population growth and GDP to the baseline level. Bokeo is the only northern province in Laos, which will be adversely affected in the Third Bridge scenario.

The simulation result indicates that firms will not change the route from EWEC to the Third Bridge when they transport goods between Bangkok and Hanoi. It also shows that traffic volume crossing the Second and the Third International Mekong Bridge will not increase as much as it will in the EWEC scenario.

Assuming an index as the traffic volume crossing the Second Bridge in the EWEC scenario is 100**,** the traffic volume of the Second Bridge in the EWEC+Third Bridge scenario will be 92.5 and 10.4 in the Third Bridge scenario. In total, the increase is only by 2.9%. It is because in the EWEC+Third Bridge scenario, we only assume that customs facilitation exists at the Nakon Phanom–Thakhek border and not on Vietnamese side, the Nam Phao–Cau Treo border. In fact, the development of the Third Bridge makes almost no difference in the traffic volume crossing the Nam Phao–Cau Treo border compared with the EWEC scenario. The development of the Third Bridge has a slight impact unless customs facilitation is implemented on both borders involving Thailand and Vietnam. If we implement customs facilitation at both Nakon Phanom–Thakhek border and Nam Phao–Cau Treo border, firms in the model will use the Third Bridge route.

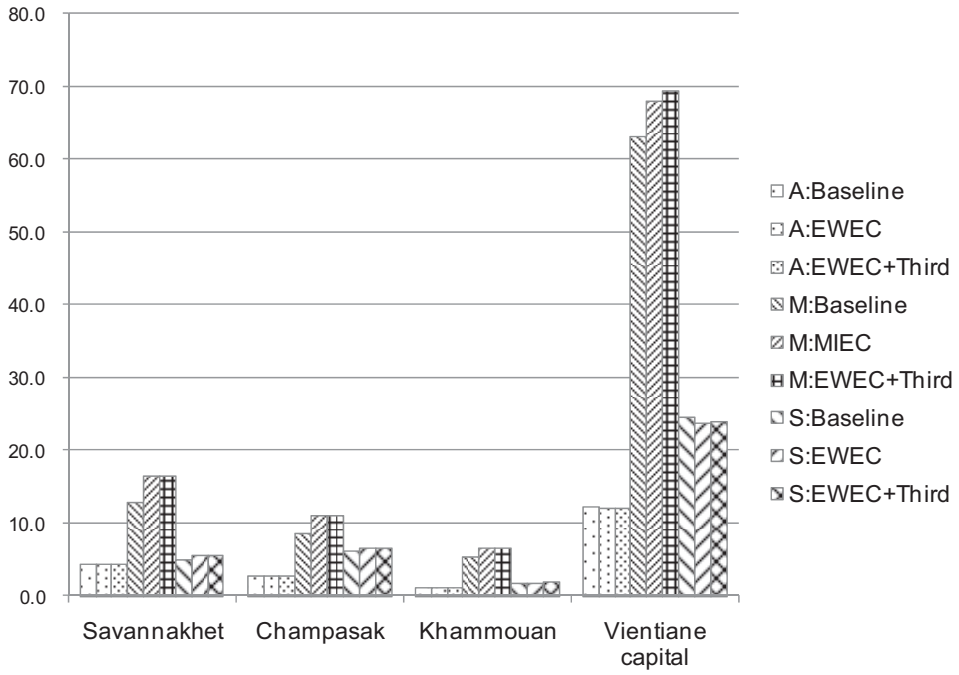
Even now without the Third Bridge, the distance of the route spanning Savannakhet, Thakhek, Nam Phao–Cau Treo border and Vinh seems to be shorter than the EWEC route straddling through Savannakhet, the Dansavan–Lao Bao border, Dong Ha and Vinh for the shipment from Bangkok to Hanoi. However, an interview with an

international logistics company revealed that they mainly use the EWEC route because it is common knowledge that the customs clearance at Dansavanh and Lao Bao is more useful and more accessible than the one at Nam Phao and Cau Treo. This reinforces claims that EWEC measures, including CBTA, as well as the corridor approach by ADB, which prepares hard and soft infrastructure for corridors in a comprehensive way, are effective.

Figure 5 also shows that additional GDP gains – specifically those of Savannakhet, Champasak, Khammouan and Vientiane – from the Third Bridge are very small. As shown in Figure 3, the difference in GDP growth is mainly attributed to

Figure 5: Gains in Sectoral GDP: the East West Economic Corridor vs Baseline

(Unit: Index (Vientiane Capital's GDP in Baseline Scenario=100)**)**



Source: IDE-JETRO GSM team.

the difference in the growth of the manufacturing sector. However, additional GDP gains from the Third Bridge for Savannakhet, Champasak, and even Khammouan are almost nil.

CONCLUSION AND POLICY IMPLICATIONS

We estimate the economic impacts of MIEC, EWEC and EWEC with the Third International Mekong Bridge on Mekong regions, most especially on Cambodia and Laos. We summarize the main findings as follows.

First, customs facilitation is an important measure to stimulate economic development. As our previous results showed, physical infrastructure development and customs facilitation are both important. The combined benefits of these measures outweigh the individual economic impacts of the “highway only” and “customs only” scenarios.

Second, there is competition among border cities. Corridors may change the advantages border cities enjoy. If we implement customs facilitation along a corridor, border cities will benefit while others will suffer from it. National governments may need a strategy to coordinate across the cities and achieve balanced growth even though competition among border cities may stimulate the economic development of the country.

Third, the economic corridor approach is effective at enhancing trade volume and economic development. The construction of the Third Bridge may have a small impact

unless customs facilitation is implemented at the Nam Phao–Cau Treo border. In Laos and Cambodia, customs facilitation must be enforced at two points on the route, namely, Thailand and Vietnam.

Fourth, there is competition among the regions within the clusters. MIEC will reduce the population growth of Phnom Penh and Bangkok and slightly raise that of Ho Chi Minh City compared with the baseline scenario. MIEC running through Ho Chi Minh City, Phnom Penh and Bangkok will reduce the excessive agglomeration forces in these central cities by connecting them with rural areas. This notwithstanding, economic corridors raise the GDP of most regions along the corridors, including Phnom Penh and Bangkok.

Finally, the simulation analysis by GSM must be emphasized. Economic corridors will change the conditions not only of the regions along the corridors but also of other regions by changing the advantages of the regions in terms of accessibility. Using simulation model like the GSM, which covers a wider area as well as many regions at the prefecture level, will be effective to analyze the economic impact of corridors for each region.

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