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**Location Advantages and
Disadvantages in Myanmar: The
Case of Garment Industry**

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Abstract

This research examines location advantages and disadvantages in Myanmar. The most notable location advantage of Myanmar is its abundant and low-wage labor. However, garment firms relocated here often suffer from difficulties such as electricity shortages, expensive and less available transport services, poor telephone, fax, and internet accesses, and cumbersome and time consuming administrative procedures. The wage gap between Myanmar and neighboring countries (including Thailand and China) does not attract garment firms to Myanmar but does lure Myanmar workers to its neighbors. In order to attract more garment firms to Myanmar, the government must enhance location advantages and alleviate disadvantages. While the country can do little to manipulate wages, it can reduce set-up, operation, and service link production costs through public policy and investment. A major priority for increasing the attractiveness of Myanmar is development of its infrastructure, especially the electricity supply. Further, institutional service link costs can be reduced by streamlining administrative procedures and establishing good governance. Such an improved business and investment climate will make it possible for the garment industry in Myanmar to compete in the global market.

Keywords: Myanmar (Burma), garment industry, location advantage, location disadvantage, cost-benefit analysis, production network, competitiveness, set-up cost, operation cost, service link cost, infrastructure

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Introduction

There are significant disparities in industrial development and income level among advanced members of the Association of Southeast Asian Nations (ASEAN) and its new members such as Cambodia, Lao PDR, and Myanmar (CLM).¹ One main reason for this gap relates to differences in how deeply each group of economies participates in well-developed and sophisticated production and distribution networks extending to all of East Asia. A salient feature of industrial development in East Asia is the development of production and distribution networks. Such have been developed by multinational enterprises (MNEs) through international trade and foreign investment in the region.

CLM countries have not yet been involved in such production and distribution networks in East Asia. These countries are former socialist economies and had open-door policies in the late 1980s and early 1990s. They have been late comers and are still more or less in transition to becoming market-oriented economies. Nevertheless, forces of globalization have accelerated the integration of CLM economies into regional and global markets through the 1990s and into the first decade of the twenty-first century.

Economic integration creates two different forces on industrial location: (1) dispersion and (2) agglomeration.² In general, dispersion forces provide opportunities for CLM economies to integrate into production and distribution networks in East Asia. It is important for CLM economies to take advantage of these dispersion forces in order to attract labor-intensive industries and to upgrade and diversify their industrial structure. Conversely, agglomeration forces apparently pose a challenge to CLM economies. Those industries that have significant agglomeration effects tend to remain in their original locations; this is also true for advanced ASEAN members.

¹ Vietnam joined the ASEAN in 1995 and was followed by Lao PDR and Myanmar in 1997 and then by Cambodia in 1999. These four countries are usually regarded as new ASEAN members, and the letters of each country's name are used for the abbreviation CLMV. However, Vietnam has grown rapidly, and its per capita GDP apparently exceeded one thousand US dollars in 2008. The remaining CLM are, however, still in their rudimentary development stage. In this research, CLM are regarded as less-developed economies in the ASEAN.

² Regarding the two opposing influences on industrial location extended by economic integration, see Nishikimi [2008].

In order for Myanmar to participate in production and distribution networks in East Asia, it must attract more labor-intensive activities. Thus, Myanmar should improve its business and investment environment and its competitiveness as a whole. This research includes an assessment of the competitiveness of the garment industry in Myanmar which is the de facto only manufacturing industry involved in global and regional production networks. Advantages and disadvantages that garment firms and factories enjoy and suffer in Myanmar will be identified.

Fragmentation theory is used in the first section to assess how production and distribution networks in East Asia have developed. This forms the base for a cost-benefit analysis of the relocation of production blocks across the border. A review of the history of the garment industry in Myanmar is included in the second section. Each item of production costs that a garment firm has to bear when it is relocated to Myanmar is then analyzed in the third section. A summary and discussion along with policy implications are provided in the last section.

1. Fragmentation

Sophisticated production and distribution networks in East Asia have been developed through fragmentation of production activities across borders. Multi-national corporations (MNCs) divide their manufacturing processes into separate production blocks (PBs) and locate them across borders so that they can exploit the non-integrated elements of location advantages such as wage differences. Kimura [2008:38-39] explains the phenomenon (Figure 1). As an example, suppose there is a big factory that takes care of all production processes upstream and downstream. Various types of production processes including labor-intensive, capital-intensive, and knowledge-intensive activities may be observed in this factory. If production processes are technically divisible, the factory may relocate PBs in appropriate places across the border and thus reduce production costs and enjoy the advantages of its own location.

However, such cross-border fragmentation of production processes may incur new set-up costs as well as additional operation and service link costs (Kimura [2008:48-49]). Set-up costs may include initial investment for construction of the new factory, collection of information on government rules and regulations, and obtaining licenses and permits in the host country. Additional operation costs may include expenses due to unreliable utilities as well as outlays related to problems such as poor infrastructure, inefficient government services, and unpredictability in the policy

climate. Service link costs may include logistics that connect separated PBs and markets as well as communication and managerial costs required to coordinate internationally scattered production activities.

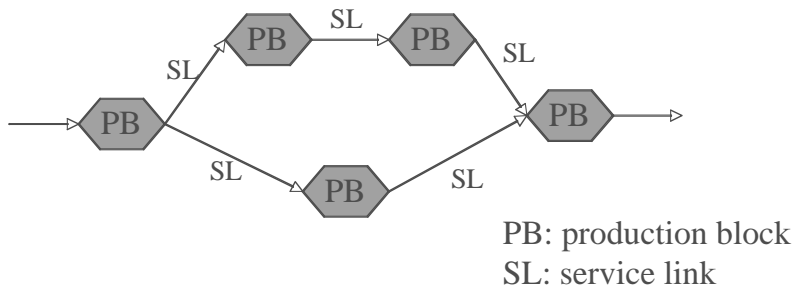
The firm may compare costs and benefits of new locations and then relocate some production activities to appropriate sites across the border only when benefits such as savings in labor costs exceed total additional costs (including those of set-up, business operations, and service links). In the textile sector (spinning, weaving, and sewing), sewing and assembly of garments are labor-intensive and may thus be shifted to low-wage countries.

Figure 1: Fragmentation: An Illustration

Before fragmentation



After fragmentation



(Source) Kimura [2008:38]

2. Brief History of the Garment Industry in Myanmar

Asia began development through garment exports (Sachs [2005:195]), and Myanmar is no exception. Here, garment sewing is the only manufacturing entity that participates in regional and global production and distribution networks. Garments represent the only exported manufactured goods in Myanmar. It is important to examine how Myanmar has established this new industry.³

Soon after the military took power in Myanmar in September 1988, the State Law and Order Restoration Council (SLORC), which was later reconstituted as the State

³ See Moe Kyaw [2001] and Kudo [2008] for details regarding the growth and decline of the garment industry in Myanmar.

Peace and Development Council (SPDC), abandoned a twenty-six-year long isolationist closed-door policy and initiated an open-door policy. The new military government allowed private firms to engage in external trade, and the Foreign Investment Law (FIL) was enacted in November 1988. This allowed foreign investment in Myanmar.

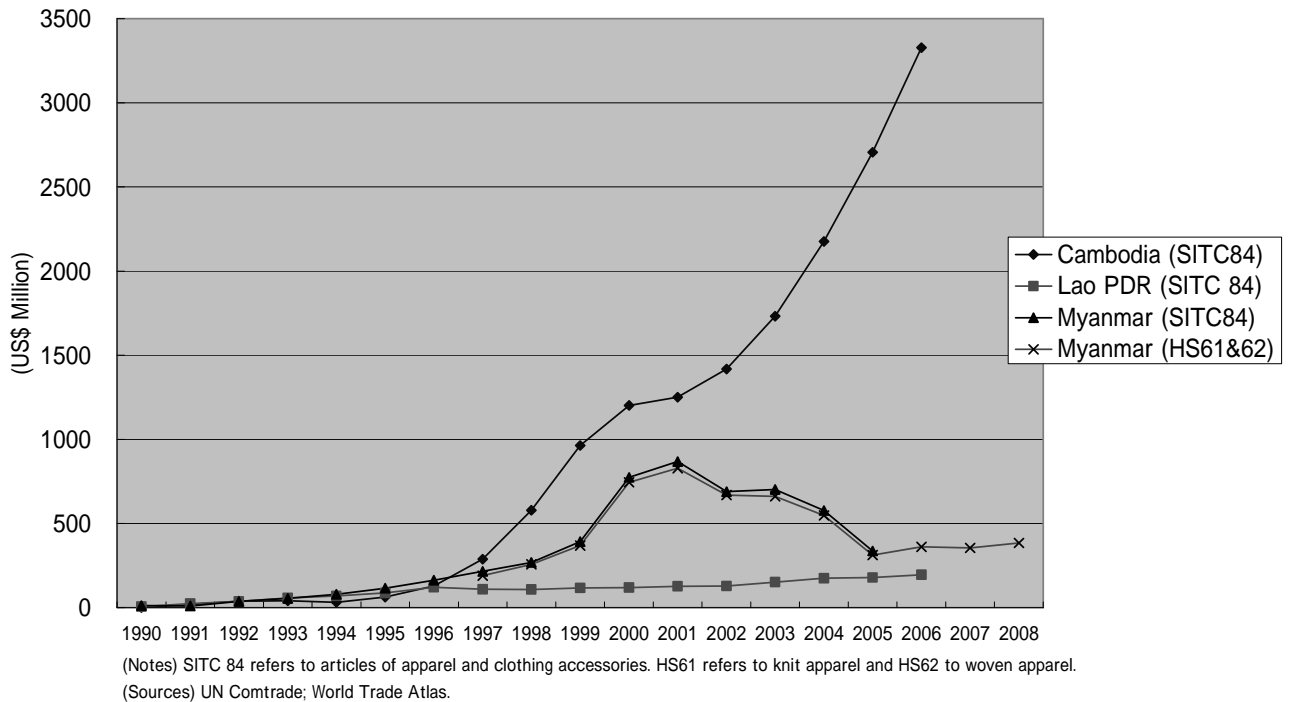
The private sector (including both domestic and foreign firms) worked vigorously to start businesses in various sectors such as manufacturing, construction, mining, trade, tourism, retail, restaurants, and other services. The garment industry exhibited strong growth throughout the 1990s but most especially in the late 1990s and at the beginning of the new century (Figure 2). The garment industry is labor-intensive, export-oriented, and uses standardized technology. Such characteristics have made the garment industry the first rung on the industrialization ladder in many developing economies. Some, such as least developed countries (LDCs) like Bangladesh and Cambodia, have experienced very high output growth in this sector.

Myanmar developed its garment industry as above. Between 1990 and 2001, it multiplied its exports 69 times. The share of Myanmar's garment exports out of its total exports increased from 2.5 percent in 1990 to 39.5 percent in 2000. Thus garments became the largest exported goods of the country.

Most garment firms are located in Yangon and its suburbs. The United States offered the largest market and in 2000 absorbed more than one half of Myanmar's garment exports. The European Union (EU) provided the second largest market and was the recipient of nearly forty percent in the same year. However, United States markets were lost in 2003 due to sanctions which included a trade embargo.

From that time, garment firms in Myanmar started to explore Asian markets, Japan in particular. In 2008, Japan was the largest market for Myanmar garments and occupied a 34 percent share of all garment exports of Myanmar. Japan was followed by Germany (24 percent), Spain (14 percent), the United Kingdom (10 percent), and South Korea (8 percent). Though Myanmar's garment industry is no longer growing rapidly, it is still the only industry in the country that has been able to connect with global and regional production and distribution networks. It is an important task for both policy makers and businessmen in Myanmar to continue to develop this industry.

Figure2: Garment Exports by CLM



3. Cost and Benefit Analysis of Garment Firms in Myanmar

In this section, first, we look at each item of production costs of garment factories in Myanmar in detail. Then, we see location advantages that garment factories can enjoy here. We also compare each item of production costs in Myanmar with that in other countries including Cambodia, whenever data is available.

3.1 Production Costs

a. Set-Up Costs

The garment industry is suitable for less developed countries because it requires a relatively small amount of initial investment, specifically in sewing machines. One entrepreneur in September 2005⁴ indicated that leather shoe factories, which are also quite labor-intensive, generally require four times the initial investment of garment factories, given the same number of workers.

This is of course good for Myanmar where domestic entrepreneurs face severe financial constraints and full-fledged foreign investment has not yet come. According to

⁴ The entrepreneur was interviewed by the author. He had long business experience in both the garment and footwear industries in Myanmar.

the Garment Survey of 2005,⁵ the average ratio of equity to debt for 142 garment firms as of December 2004 was a surprisingly high 98 percent. This implies that they were mostly self-financed. There were only eight firms among the 142 that received bank loans. With very limited access to financial resources, Myanmar firms can only establish businesses that require little investment. Too, there have been few foreign investments in the garment industry in Myanmar. As of March 2005, there were 45 out of 142 garment firms (32 percent) that had foreign equity (Kudo [2008:1004]). Of these, 31 were wholly owned by foreign entities, nine were joint ventures with military-related firms, and five were joint ventures with private firms. A majority of garment firms in Myanmar had domestic investments. Garment firms in Cambodia face comparatively fewer financial constraints since a majority of them have foreign investments.⁶

b. Business Operation Costs

As in other developing economies, most garment industries in Myanmar operate on the basis of cutting, making, and packing (CMP) arrangements. Overseas buyers do everything but production; they find customers, design clothes with detailed specifications, and procure and supply raw materials to apparel factories in Myanmar. These factories do the cutting, sewing, and packing only. They then re-export all products to overseas markets (Kudo [2009:79]). The business operation of garment factories with CMP arrangements thus includes production costs only, and these consist of items such as wages, electricity and diesel, transportation, communication, factory and office rental, maintenance and repair of sewing machines, and administrative expenses.

Wages of workers naturally dominate the operation costs of garment factories. This is why the garment industry has shifted to countries where wages are lower. The average wage of Myanmar workers is very low, even when compared to those in Cambodia. Thus, garment factories can reduce labor costs by relocating to Myanmar.

However, factories must pay more for electricity and diesel. Electricity in Myanmar is by far the poorest of infrastructural services. According to the aforementioned Garment Survey of 2005, the shortage and unreliability of the electricity supply has

⁵In collaboration with the Myanmar Garment Manufacturers Association (MGMA), the author conducted a survey of garment firms in Myanmar in 2005. Interviews came from 142 out of 165 firms identified as operating at that time.

⁶ As of 2006, there were 295 member firms in the Garment Manufacturers Association in Cambodia (GMAC). Of these, 80 had investments from China, 78 from Taiwan, 40-50 from Hong Kong and Macao, and only three or four had Cambodian domestic investments (JCFA[2007:36]).

been seen as a severe obstacle for garment production (Table 1). In the same survey, 69 out of 139 respondents answered that they had experienced power interruptions more than three times a day, and these had often lasted more than three hours. As a consequence, 134 out of 141 respondents used or shared their own generators.

Table 1: Garment Firm Assessment of Infrastructure Services in Yangon, 2005

	Very Severe Obstacle	Major Obstacle	Moderate Obstacle	Minor Obstacle	No Problem
Telecommunications	3	18	30	34	56
Electricity	53	55	17	8	8
Transportations	0	2	20	35	84

(Note) These are multiple answers of 141 respondents.

(Source) Garment Survey of 2005.

The electricity supply has not improved much since that time. In the ERIA-CLMV Survey of 2008,⁷ firms were asked to rate infrastructure services using a five point scale where 1 means “very poor” and 5 means “excellent.” The average rating of electricity in Myanmar was considerably lower than that in Cambodia (Table 2). However, firms in each country answered the questionnaire independently, and most may not have known situations in other countries. Nevertheless, the average rating of electricity in Myanmar was significantly lower than the average rating of other infrastructure services in this country. Thus, the poor electricity supply can be identified as one of the most serious obstacles for manufacturers in Myanmar.

Table 2: Average Firm Rating of Infrastructure, 2008

	Myanmar		Cambodia	
	National (60 Firms)	Yangon (30 Firms)	National (76 Firms)	Phnom Penh (62 Firms)
Electricity	2.2	2.2	3.0	3.0
Water	3.5	3.7	3.3	3.4
Gas/Fuel	3.2	3.5	3.3	3.3
Transportation	3.3	3.2	3.4	3.3
Telecommunication	3.1	2.8	3.4	3.5
Industrial estates	2.9	2.7	3.5	3.5
Accommodation for foreigners	3.3	3.0	3.7	3.7
Average	3.1	3.0	3.4	3.4

(Notes) Ratings utilize the following scale: 1=very poor, 2=poor, 3=fair, 4=good and 5=excellent.

(Source) ERIA-CLMV Survey of 2008.

⁷ A survey was conducted by the ERIA-CLMV study team in November-December, 2008 to assess the business and investment environment in Cambodia, Lao PDR, Myanmar, and Vietnam. Sixty firms were surveyed in Myanmar. Of these, 30 were located in Yangon, 20 in Mandalay, and 10 in Myeik. Ten firms were garment industries; nine of these were located in Yangon and one in Mandalay. There were 76 firms surveyed in Cambodia; 62 of these were in Phnom Penh.

One garment factory interviewed in April 2008 is 100 percent foreign-owned (Hong Kong) and has 1,050 workers. At that time, wages were US \$40,000 (US \$38 per capita) per month, but electricity costs were US \$7,000 per month. Diesel for running a generator when the factory had power failures was US \$4,000 per month. As a result, expenses for electricity and diesel were about 30 percent of the labor costs in this factory. The electricity supply of this particular factory was better than that of other private factories because it was located in a plot of land leased from the Ministry of Industry (1)⁸. A nearby garment factory suffered a much more severe shortage of electricity. They experienced a three-hour blackout each day during the rainy season and had only three-hours of electricity each day during the dry season.

Another example is a Myanmar domestic garment factory with 415 workers. Wages were US \$18,400 (US \$44 per capita) per month. Electricity was US \$960, and the cost for diesel was US \$6,100. The total of these costs was equivalent to 38 percent of the labor costs. This may represent a more general and prevalent situation than does the first case because this factory was located in an industrial zone along with many other similar garment factories. According to the Garment Survey of 2005, the ratio of electricity and diesel costs to wages was 39 percent. Thus, expenses for electricity and diesel easily outweigh any reduction in production costs that result from the inexpensive wages paid to Myanmar workers.

c. Service Link Costs

By relocating to Myanmar, garment factories must pay additional service link costs that include transportation and communication. Due to underdevelopment of upstream and supporting industries, garment factories in Myanmar must generally import all raw materials and auxiliary items with the probable exception of carton boxes and plastic bags. After sewing and assembling, all products are again exported to overseas markets. International buyers placing orders to garment factories in Myanmar by CMP arrangements must bear these transportation costs. A negative aspect for them is that transportation fees to ship cargo to and from Yangon are more than other major cities in neighboring countries.

Table 3 shows freight charges for vessels shipping from Yangon Port in Myanmar,

⁸ There are two Ministries of Industry. One is primarily in charge of light industries such as those manufacturing consumer goods. The other is in charge of heavy industries such as those manufacturing capital goods.

Leam Chabang Port in Thailand, and Singapore Port. Freight charges for outgoing vessels from Yangon Port are more expensive than other major ports such as Bangkok/Leam Chabang. According to the author's interviews, if a garment firm in Yangon shipped one 20-foot container to Tokyo/Yokohama in March of 2008, it cost US \$1,300 and took about 20 days.⁹ Conversely, it cost US \$1,340 to transport a 40-foot container from Leam Chabang Port to Tokyo/Yokohama Port and took eight to nine days. This is due to economies of scale in transportation, and Leam Chabang Port has a much larger number of calling vessels. World Bank [2009:172] reports that its costs about US \$400 to ship a container to the United States from China, about US \$800 to ship from India, and US \$1,300 to ship from Sierra Leone. China's enormous trade is a major reason for low transport costs, and these falling transport costs have encouraged countries to move production to China. Leam Chabang Port also provides more reliable transport and handling services than does Yangon Port.

Table 3: Freight Charges for 20-foot Containers

(US\$)

From Yangon Port to					From Leam Chabang Port to		From Singapore to	
Port of Destination	Freight Charges			Travel Time	Freight Charges 2008 February	Travel Time	Freight Charges 2008 February	Travel Time
	2007 March	2007 September	2008 March					
Singapore	480	265	1050	6 days	450	2 days	-	-
Bangkok	685	475	1250	14 days	80	0-1 day	450	2 days
Port Klang	580	400	1038	5 days	400	3-5 days	-	1 day
Jakarta & Surabaya	800	460	1050	5 days	700	5-8 Days	200	2 days
Yokohama	(All vessels go to Japan via Singapore or Port Klang.)				1340(40 FCL)	8-9 days	940(40 FCL)	7 days
Calcutta	925	940	1725	14 days				
Qingdao	900	655	1350	10 days				
Cebu	1150	800	1300	14 days				

(Note) Freight charges from Leam Chabang/Singapore -Yokohama are for 40-foot containers that are "full container loaded" (FCL).

(Source) Freight charges for vessels departing from Yangon Port are from MIFFA. Freight charges for vessels departing from Leam Chabang Port and Singapore are from JETRO [2008:262-263].

Freight charges for outbound vessels from Yangon Port fluctuated widely between March 2007 and March 2008. This was a seasonal factor. According to a freight forwarder in Yangon, about two thirds of Myanmar's exports from Yangon Port in 2007 were agricultural produce such as beans, pulses, and rice; most of the remaining exports were garments. As agricultural produce exports peak between February and May after harvesting, freight charges for outbound vessels tend to increase.

In addition to this seasonal factor, a wide fluctuation of freight charges also result from the small number of vessels calling at Yangon Port. The volume of container handling of all ports in Myanmar (including Yangon, Sittway, and Mawlamyine) was

⁹ The author interviewed a manager of a freight forwarder in Yangon on April 30, 2008.

only 165,384 TEU¹⁰ in FY 2005¹¹. Leam Chabang Port alone handled 3.76 million TEU containers.¹² Only small vessels call at Yangon Port and are moving cargo to Singapore Port, Port Klang, or Bangkok/Laem Chanbang Port. At these ports, shipments are aggregated into much larger and faster ships for longer hauls. There are only five liners at Yangon Port. These include Myanmar Five Star (a national flag carrier) and four foreign liners. The capacity of calling vessels is small due to the shallow depth of the river which is about 400 TEU in the rainy season and 300 TEU in the dry season. There are few vessels calling at Yangon Port. A sharp increase of freight charges in March 2008 resulted when some liners were stopped from calling at Yangon Port.¹³ Around this time, exporters from Myanmar had to make a booking for cargo space on a vessel at least ten days before its departure. It is thus obvious that garment firms located in Bangkok and its suburbs have an advantage in logistics over those in Yangon and its suburbs.

Communication services are also poor in Myanmar. Table 4 shows access to telephone, mobile phones, and the internet in CLMV, Bangladesh, and China. As of 2005, Myanmar had by far the lowest values in all indicators. What is worse, perhaps, is that the gap between Myanmar and others grew wider following 2000. Myanmar fell behind those countries that vigorously invested in their telecommunication infrastructure in the last five years.

Table 4: Telecommunication Access in 2005

	Myanmar	Cambodia	Lao PDR	Vietnam	Bangladesh	China
Fixed Line and Mobile Phones Subscribers	1.3	7.8	12.6	30.6	6.6	57.0
Mobile Phone Subscribers	0.3	7.6	11.3	11.5	5.9	30.2
Internet Users	0.07	0.32	0.44	12.89	0.24	8.51

(Note) Measures are based on 100 people.

(Source) World Bank, *World Development Indicators*, 2008.

Reasons for such failure include the Myanmar governmental restrictions as well as a government monopoly on the provision of telecommunication services. The Myanmar Post and Telecommunication Enterprise (MPT) is a state-owned enterprise (SEE) that falls under the jurisdiction of the Ministry of Communications, Posts, and Telegraphs. It

¹⁰ TEU stands for “20-foot equivalent units,” which is the measure of a box 20 feet long and 8 feet wide with a maximum gross mass of 24 metric tons (WB [2009:178]).

¹¹ FY stands for “fiscal year,” a year starting from April and ending in March.

¹² The figure for Myanmar comes from the Myanmar Port Authority; the one for Laem Chabang is from Ootaka [2007:57].

¹³ Based on the author’s interview with the Myanmar International Freight Forwarders Association (MIFFA) on February 20, 2009.

monopolizes telephone services, and services provided are notorious for frequent disconnection, lengthy waiting time for connection, and high prices in the parallel market (Kudo [2009:94-95]). Mobile phones are scarce and only for privileged customers. Mobile phones are occasionally sold to specially designated groups such as military cadres and those of high ranking government officials. Mobile phones are then sold in the parallel market where actual customers have to pay extravagant prices.¹⁴

Other than the MPT, the government has allowed only one quasi-private company to enter the market of internet providers. Internet accessibility in Myanmar lags far behind Cambodia, Lao PDR, and Bangladesh. The “internet café” is still a phenomenon found only in major cities, and internet access through personal computers at home is beyond the means of a majority of the population. The Myanmar government is aware that participation of the private sector would significantly improve telecommunication services, but officials have been cautious about liberalizing and privatizing this sector because of their concern about security. Even fax machines must be registered with authorities in this country. The Myanmar government has and will sacrifice better telephone and internet connections in order to control information.

Institutional service link costs are also high in Myanmar. Garment firms in Yangon must apply for export and import licenses for every transaction. To do so they must go as far as Naypyidaw, the new capital located about 300 kilometers north of Yangon. It usually takes about two to three weeks to obtain an export or import license because the Trade Policy Council, a higher authority above related ministries, must give sanction to each case.¹⁵ Cargo is often kept at port for a long time in order to receive inspection and customs clearances. This makes lead time for garment production in Yangon longer and prohibits sewing seasonal and fashion apparel items which require quick response.

3.2 Location Advantages

a. Labor

One of the most obvious location advantages of Myanmar is the availability of abundant, cheap, and relatively well-educated labor. The working-age population (15-59 years of age) increased from 20.6 million (56 percent of the total population) in FY 1985 to 32.7 million (59 percent of the total) in FY 2005 (CSO [2006:15-19]). It is

¹⁴ A mobile phone traded at about US \$2,000 in the parallel market in 2008. This is why the first launch of pre-paid mobile phones of US \$10 and \$20 SIM cards in December 2008 had become fanatic news in Myanmar. People made haste in purchasing them.

¹⁵ This is based on the author’s interview with a manager of freight forwarder in Yangon on April 30, 2008.

reasonable to believe that there are a large number of un-employed and under-employed workers in the labor markets of Myanmar, especially in rural areas. Fujita [2009:250] has estimated that agricultural labor households with no tillage right of land constituted 20-40 percent of households in rural Myanmar. He also indicates that their real wage rate in rice terms (rice wage) has declined to 50-60 percent during the last two to three decades (Fujita [2009:260]). This part of the population could be mobilized to become garment workers once industrialization and urbanization is accelerated.

According to the aforementioned ERIA-CLMV Survey of 2008, the average monthly wage of general workers in Yangon is US \$35 (Table 5). The average monthly wage of general workers in Phnom Penh was found to be US \$80. Average wages of Myanmar workers were lower than the Cambodian minimum wage of US \$50 for garment and footwear workers in Phnom Penh. In addition to unskilled labor, the salaries of middle management and engineers in Myanmar were found to be lower than in Cambodia, even though the quality and qualification of those human resources were unknown and may not be exactly comparable.

Table 5: Average Monthly Wages, 2008 (US\$)

	Myanmar		Cambodia	
	National (60 Firms)	Yangon (30 Firms)	National (76 Firms)	Phnom Penh (62 Firms)
Worker	36.1	35.0	79.0	80.0
Middle Management	110.6	118.4	209.0	217.0
Engineer	111.3	116.6	464.0	467.0

(Note) Wages for Myanmar were converted from kyats to US dollars with the parallel exchange rate of 1,250 kyats per US dollar as of November, 2008.

(Source) ERIA-CLMV Survey of 2008.

Myanmar people are relatively well-educated, and the literacy rate is considerably higher than that of Cambodia, Lao PDR, and Bangladesh (Table 6). The literacy rate for women is equally high in Myanmar. This is good for the garment industry in Myanmar since women constitute a majority of the labor force in this sector. School enrollment rates in primary, secondary, and tertiary education also appear better than the other three countries.

Table 6: Literacy Rate and School Enrollment Rate

	Literacy Rate		School Enrollment			GDP per Capita (2006)
	(% of People Ages 15 and Above)	(% of Females Ages 15 and Above)	(Primary; % net)	(Secondary; % net)	(Tertiary; % gross)	(Constant 2000 US\$)
Myanmar	89.9 (2000)	86.4 (2000)	99.6 (2006)	45.7 (2006)	11.9 (2002)	234.0
Cambodia	73.6 (2004)	64.1 (2004)	89.9 (2006)	23.9 (2005)	4.5 (2006)	444.8
Lao PDR	68.7 (2001)	60.9 (2001)	83.7 (2006)	34.9 (2006)	9.1 (2006)	439.0
Vietnam	n.a.	n.a.	84.5 (2006)	68.9 (2006)	15.9 (2005)	575.8
Bangladesh	47.5 (2001)	40.8 (2001)	88.9 (2004)	41.0 (2004)	6.0 (2005)	419.4
China	90.9 (2000)	86.5 (2000)	n.a.	n.a.	21.6 (2006)	1597.8

(Notes) Figures in parentheses indicate the year. The figure is based on UNFPA (2007).

(Source) World Bank, *World Development Indicators*, 2008.

According to the ERIA-CLMV Survey of 2008, the education level of Myanmar general workers is significantly higher than that of Cambodia (Table 7). Most workers in Myanmar have formal schooling, but about 20 percent of Cambodian workers have none. Nearly a half of Myanmar workers have received a middle-high school education, but only about 30 percent of Cambodian workers have received this level. About ten percent of Myanmar workers have received college and/or university level education, but there were virtually no Cambodian workers who have received such education.

Education level may be considered a representation of human capital. All else being equal, the labor productivity of workers in Myanmar thus seems higher than that of Cambodian workers. Compared to that of Myanmar, the garment industry in Cambodia has been rapidly growing and has kept its competitiveness in the United States and EU markets in spite of its relatively poor human capital. However, the garment industry in Myanmar should have a good opportunity to compete in global markets and also to grow once other obstacles are removed.

Table 7: Educational Background of Workers, 2008 (%)

	Myanmar		Cambodia	
	National (60 Firms)	Yangon (30 Firms)	National (76 Firms)	Phnom Penh (62 Firms)
No Formal Schooling	0.4	0.8	21.0	21.3
Elementary School	21.6	19.7	27.0	27.3
Middle-High School	46.5	45.1	27.8	27.8
High School	18.9	18.9	17.9	17.1
Technical/Vocational School	1.8	2.0	5.6	5.6
College/University	10.9	13.6	0.8	0.9
Graduate School	0.0	0.0	0.0	0.0

(Source) ERIA-CLMV Survey of 2008.

There are also emerging challenges that may erode advantages discussed above. One

is the rapid increase of worker wages in Myanmar. The average monthly wage of sewing-machine-operators in Myanmar was about US \$20 between late 2000 and mid-2005 (Kudo [2008:1014]).¹⁶ From mid-2005, Myanmar garment worker wages were denominated in US dollars and had almost doubled by April 2008. According to interviews with eight garment firms in Yangon in April 2008,¹⁷ average monthly wages were US \$38 and ranged from US \$32 to US \$43. Such wage estimates have also been supported by data from the ERIA-CLMV Survey of 2008 (Table 5).

Actually, real wages of garment workers in Myanmar decreased during this period. From June 2005 to April 2008, inflation was comparatively high, and the consumer price index (CPI) increased 2.0 times. However, wages of garment workers were denominated in kyats and increased only 1.7 times.¹⁸ Thus, the rise of garment worker wages lagged behind inflation.

A sharp appreciation of the real exchange rate of the kyat appears to have been responsible for the sharp rise in garment worker wages in US dollar terms. Exchange rates for the kyat were relatively stable for the period. The yearly average exchange rates of the kyat in unofficial parallel exchange markets were 1,049 kyats per US dollar in 2005, 1,251 kyats per US dollar in 2006, 1,299 kyats per US dollar in 2007, and 1,195 kyats per US dollar in 2008. Since inflation rates were high throughout the period, the real exchange rate of the kyat increased from 983 kyats per US dollar in June 2005 (base period) to 557 kyats per US dollar in April 2008.¹⁹ Kubo [2007] attributed such sharp appreciation of the kyat to an improved balance of payment (BOP) mainly due to large exports of natural gas to Thailand.²⁰ Whatever the reasons, a sharp rise in worker wages in US dollars can weaken competitiveness of the garment industry unless it is accompanied by improved productivity. However, there is no evidence to indicate a rise in the productivity of this industry.

¹⁶ In general, international buyers of garment products pay more attention to wages denominated in US dollars than to those denominated in local currencies. They also compare US dollar-denominated wages with other potential production sites. In this research, the author converted Myanmar worker wages in kyats into US dollars using parallel exchange rates.

¹⁷ See Kudo ed. [2008] for detailed interviews.

¹⁸ Average wages of garment workers in Myanmar were 33,600 kyats (equivalent to US \$38 as converted by the parallel exchange rate) in April 2008, and they were 20,000 kyats (equivalent to US \$20) in mid-2005.

¹⁹ Real exchange rates should be calculated from differences in inflation rates between Myanmar and the United States. However, the inflation rate in Myanmar has been much higher than that in the United States. The author assumed a zero inflation rate in the United States for convenience of calculation in this research.

²⁰ It has been argued that such an appreciation of the kyat is a symptom of Dutch Disease. However, Kubo [2007] has opposed this proposition.

Another challenge that may erode advantages discussed earlier is the occasional shortage of a local labor force in Yangon despite a nation-wide surplus of labor. There are two possible factors responsible for such shortages. One is the loss of garment workers to rural areas in Myanmar or to foreign countries. Due to the increased living cost in Yangon and a slow rise in wages, many garment workers quit their jobs and go back to hometowns and villages or go abroad to seek jobs with higher wages. The garment industry in Yangon has failed to mobilize a large scale labor force from nation-wide labor markets and rural areas in particular. This is due to the low wages they can offer. Many garment workers, particularly ones with experience, appear to have gone to Mae Sot, a Thai border town where many garment factories have congregated (Kudo and Kuroiwa [2009 forthcoming]). Unless the garment industry in Myanmar increases its productivity and wages paid to workers, it will continue to lose workers to foreign countries and may thus face sporadic and localized labor shortages amid prevalent un-employment and under-employment in the national labor market.

A third challenge involves the high labor turnover in the garment industry. High labor turnover can be an obstacle for workers who want to gain knowledge and acquire skills. The ERIA-CLMV Survey of 2008 showed that the average rating of ten garment firms in Myanmar regarding labor turnover was lower than that of the total sixty firms surveyed (Table 8). Compared to other industries, garment firms also had difficulty recruiting workers. This indicates that it had become difficult to retain workers in the garment industry. All three of these challenges may eventually erode the primary location advantage of Myanmar, the availability of an abundant, cheap, and well-educated labor force.

Table 8: Average Firm Rating on Labor, 2008

	Myanmar		Cambodia	
	National (60 Firms)	Garment (10 Firms)	National (76 Firms)	Phnom Penh (62 Firms)
Quality of Workers	3.3	3.2	3.2	3.2
Quality of Middle Management	3.4	3.6	3.4	3.3
Quality of Engineers	3.5	3.6	3.3	3.3
Labor Cost	3.1	3.2	3.3	3.3
Ease of Recruitment Workers	3.5	3.1	3.3	3.2
Labor Turnover	3.4	2.7	3.1	3.0
Labor Relations	3.6	3.7	3.1	3.0
Average	3.4	3.3	3.2	3.2

(Notes) Ratings utilize the following scale: 1=very poor, 2=poor, 3=fair, 4=good and 5=excellent.

Out of 62 firms in Phnom Penh, 52 deals with garments.

(Source) ERIA-CLMV Survey of 2008.

b. LDC Privileges

Special and preferential treatment of exports from LDCs makes a difference in success. For example, the African Growth and Opportunity Act (AGOA) offers preferential access to United States markets for imports from Sub-Saharan African countries and helps to create urban-based manufacturing employment in beneficiary countries (Sachs [2005:195]). However, since 1997, Myanmar's exports have been deprived the status that can be enjoyed under the EU generalized system of preferences (GSP). Further, since 2003, the United States has banned all imports from Myanmar. The Myanmar military government is under these western trade sanctions because of its poor human rights record and delayed democratization.

Myanmar's garment exports still enjoy tariff exemptions from Japan. Japan offers a scheme of special preferential treatment for LDCs. For example, while China and Vietnam have to bear a 7.4 to 10.0 percent tariff on woven shirts and blouses, Myanmar along with other LDCs such as Cambodia, Lao PDR, and Bangladesh does not have to pay such tariffs as long as it meets the requirement of "rule of origin". The tariff exemption has promoted garment exports to Japan from Myanmar. Japan was the largest market for such exports in 2008 and occupied about one third of total garment exports from Myanmar. Japan's tariff exemption on imports from Myanmar is an obvious location advantage of Myanmar.²¹

c. FDI Incentives

Myanmar's Foreign Investment Law (FIL) was created in 1988 and offers foreign investors various privileges. FIL permits 100 percent ownership by foreign companies and allows joint ventures with SEEs or private firms. For joint ventures, the foreign capital must be at least 35 percent of total capital. A build-operate-transfer (BOT) scheme is applicable for hotel and real estate projects, and production sharing contracts are allowed for extractive industries (including the exploitation of natural gas) (Thandar Khine [2008:22-23]). With the exception of twelve sectors reserved for SEEs only, all economic activities are open to foreign investment.²² However, foreign investors may also enter these restricted sectors with approval of the Myanmar government. The FIL

²¹ Firms in Myanmar must pay a ten percent tax on exports. This can easily offset the benefits derived from Japan's special preferential treatment.

²² The State-owned Enterprises Law of 1989 stipulates the twelve sectors that are reserved for SEEs only. These include extraction of teak, petroleum, natural gas, pearls, jade and precious stones, postal and telecommunication services, generation of electricity, broadcasting and television services, and manufacture of products related to security and defense.

also provides various benefits such as exemption from the three-year income tax, allowance of accelerated depreciation, and exemption (or relief) from customs duty and other internal taxes such as those on machinery, equipment, and spare parts. The FIL is liberal and comparable to laws of advanced ASEAN members.

In reality, however, there are many disadvantages for foreign investment in Myanmar. The Myanmar Investment Commission (MIC) requires a minimum capital investment of US \$500,000 for any manufacturing firm.²³ Such an amount is often more than labor-intensive garment firms can afford. It is generally believed that the minimum capital for foreign investment is set by the FIL and other documents. However, none include a clause that explicitly stipulates the amount.

There are many discrepancies between written clauses and actual practices in FDI. Chapter III of the FIL gives foreign investors the right to transfer foreign currency abroad. However, in actuality it is difficult to get permission to transfer profits abroad (JBCTIF [2008:183]). Issuance of import licenses for machinery, spare parts, and automobiles is arbitrary, limited, and often delayed. Foreign capital brought into Myanmar is converted to kyats with an official exchange rate of about six kyats per US dollar. This is grossly overvalued compared to the unofficial parallel exchange rate which is about 1,200 kyat per US dollar. In joint ventures, foreign partners that bring foreign capital must bear an inequitable burden.

Attractive incentives for foreign investment are written on paper. However, actual practices are poor and incompatible with stipulated clauses. It is widely believed that there are many foreign firms disguised as Myanmar indigenous entities. Such foreign firms are called “sleeping partners;” they do not appear in any official documents. They enjoy the legal status of being indigenous entities and avoid explicit and implicit disadvantages that accompany being a foreign entity. This may be a reason for the dominance of indigenous firms in Myanmar’s garment industry. Conversely, foreign firms dominate the garment industry in Cambodia where they enjoy actual benefits from government incentives on FDI.

Conclusion

Location advantages of Myanmar include: (1) the availability of abundant, cheap, and relatively well-educated labor, (2) preferential treatment for “Made-in-Myanmar”

²³ A minimum capital investment of US \$300,000 is required for foreign investors in the service sector.

product exports offered in Japan, and (3) FDI incentives provided by the host government. However, garment firms must pay set-up costs and additional operating costs for such things as expensive utilities and transportation fees. Further, garment firms that have relocated to Myanmar suffer from an unreliable electricity supply, poor telephone, fax, internet and e-mail connections, rough road conditions, a small capacity for and an infrequent number of vessels calling at Yangon Port, and cumbersome and time consuming administrative procedures. Thus, there are both advantages and disadvantages for garment firms that relocate to Myanmar. Firms make the decision to locate or not locate based on a calculation of costs and benefits.

The simple way to attract more garment firms to Myanmar is to enhance location advantages and reduce disadvantages for potential investors, either foreign or domestic. However, implementation of such is anything but simple. The most important location advantage of Myanmar is the availability of cheap labor. However, it is difficult for the government to manipulate worker wages by policy intervention. Wages are principally determined by market forces, and the government has little leeway to intervene in labor markets and change wages. The government may try to restrain wages by prohibiting or restricting workers from organizing labor unions. However, such policy intervention can be short-lived, and market-driven wages may prevail in the long term. The real exchange rate of the kyat will decide the internationally comparable level of wages for workers in Myanmar. The Myanmar government is powerless to control the real exchange rate.²⁴

However, the Myanmar government can reduce costs such as those for set-up, operations, and service links. It can improve infrastructure services by instituting better public policy and promoting more public investment. The electricity supply should be the first priority. A sufficient and reliable electricity supply is necessary for the garment industry and other manufacturing sectors as well.

The rehabilitation and improvement of Yangon Port is critically important for reducing transport costs and time. Transport services tend to enjoy economies of scale, so the Myanmar government should attract more business establishments and plants (foreign and domestic) to Yangon. As demand for transport services increases, agglomerated firms will enjoy better transport services with cheaper prices and more frequency. This will enhance the competitiveness of firms located in Yangon and will

²⁴ The Myanmar government may be able to constrain the inflation rate by instituting a more disciplined fiscal and monetary policy, and this may eventually depreciate the real exchange rate of the kyat. Assessment of such fiscal and monetary policy is beyond the scope of this paper. See Kubo [2007] for further discussion.

eventually attract more firms to that area. Thus, a virtuous cycle starts to evolve. Yangon should determine how to get rapid, frequent, cheaper, and more reliable access to Singapore Port. This port is a major Asian hub from which “Made-in-Myanmar” products can be exported to global markets. Providing better feeder services from Yangon to Singapore should have a priority over construction of a new deep sea port located somewhere along the Myanmar coast. Such an investment in construction will be too big a burden for national finance and may result in failure due to shortage of cargo.

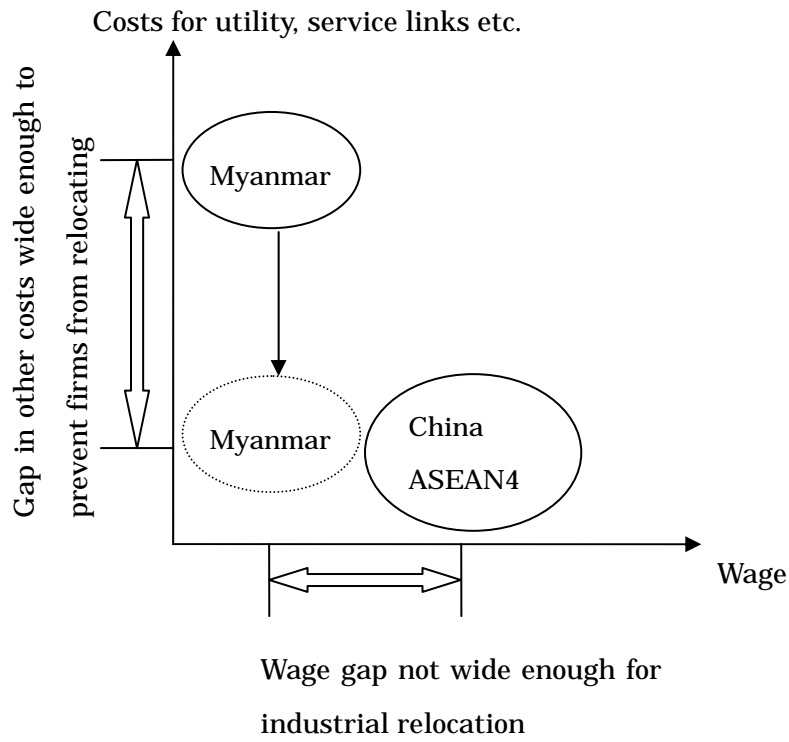
Institutional service link costs should also be reduced. There are many inefficient, unpredictable, and lengthy administrative procedures related to such matters as exports and imports, foreign investments, exchange rates, remittance of foreign currency, and visas for foreigners.²⁵ Along with the poor transport infrastructure, such administrative inefficiency makes it difficult for garment firms in Myanmar to produce seasonal and fashionable clothes with shorter product cycles.

Myanmar is a country suitable for standardized labor-intensive industries, and it can attract more firms from the advanced ASEAN members and China where worker wages have risen. However, a wage gap is not wide enough to attract firms to Myanmar. For example, wage differences between garment workers in Mae Sot, Thailand and those in Yangon were about five-fold around mid-2006 (Kudo and Kuroiwa [2009 forthcoming]). Such may be wide enough to attract Myanmar workers to Mae Sot but not wide enough for Thai garment firms to relocate to Myanmar. Myanmar obviously has low wages. However, location advantages derived from labor costs can easily be offset by other disadvantages such as electricity shortages, transport costs, communication costs, administrative red tape, and lack of skilled labor and supporting business services (see Figure 3).

To date, the garment industry in Myanmar has grown through efforts of the private sector without much government support. However, such growth has a limit, and reductions in production costs (other than those for labor) have become more important for maintaining the competitiveness of garment industries in Myanmar. Here, the government must play a larger role. It must carefully examine the obstacles and bottlenecks facing garment firms in Myanmar and launch a comprehensive and consistent program to overcome them. Garment manufacturing will then be an activity that leads the Myanmar economy in its further climb up the industrial ladder.

²⁵ See JBCTIF [2008:182-189] for details.

Figure 3: Gaps in Wages and Other Costs



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